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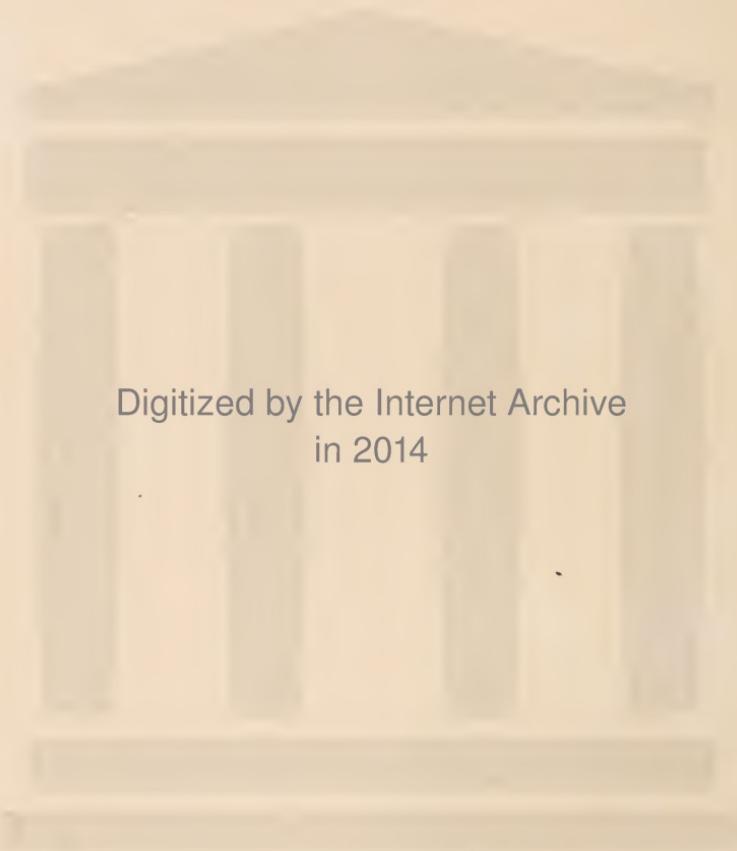
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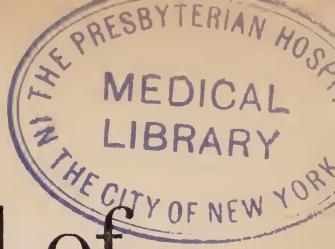


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The Journal of Cutaneous Diseases

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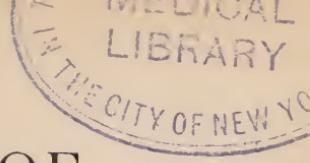


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SEVEN CASES OF DERMATITIS EXFOLIATIVA WITH A FATAL ENDING IN FIVE.

BY JOHN T. BOWEN, M. D., Boston.

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DURING the last five years a number of cases of generalized dermatitis exfoliativa have been treated and studied in the Ward for Skin Diseases of the Massachusetts General Hospital. As the records of some of these cases are fairly complete, and as it is important in my opinion that a large number of fully reported cases of this obscure and much discussed affection should be collected in order to obtain more light ultimately, I have considered it worth while to describe, as they stand upon my records, the following cases. If it is true that they cannot claim to settle many of the mooted points, I think it is equally true that they offer a slight contribution to some of the questions at issue.

In 1902, at the meeting of the American Dermatological Association, the writer presented a communication entitled "Four Forms of Generalized Exfoliative Dermatitis." While not agreeing with the complicated sub-divisions of the French, it was considered that these four forms had claims to be considered separately. These forms were each illustrated by a typical example.

The first form was the recurrent desquamative scarlatiniform dermatitis, which has been described especially by the French. It was admitted that this form may occur from the ingestion of drugs, although it is clearly shown that no such association exists in a number of the cases, as will be further emphasized later. This form seems to be quite clearly cut, and not to afford examples which merge into the other types.

The second form, illustrated by a typical case, was what has been described as dermatitis exfoliativa (Wilson), "dermatite exfoliative généralisée." It was remarked that the boundary line between this form and some of the others was not very clearly defined.

The third form was that which occurs as a sequel to psoriasis, eczema, lichen planus, or is caused by the administration of a drug internally, such as quinine, belladonna, etc., or by the action of an external agent such as mercury.

The last form was the pure pityriasis rubra of the Hebra type, of which a typical example was cited.

My experience since this short paper was written has tended to show me more and more how much these types that I have alluded to, as well as the more complicated sub-divisions of Brocq and others, run into one another, as is well illustrated by several of the cases that follow:

CASE 1. The patient was a man of fifty-seven, born in New York. He entered the hospital on April 10, 1905. His family history was negative, and he had had no previous illness with the exception of pneumonia ten years ago.

Nine months ago his present affection began with itching on his back. The skin at this point soon became red, and scaling. This had gradually spread until two months ago when the scaling and redness became general over the whole body. On entrance to the hospital he was in a condition of general erythema, and profuse scaling. The scales were of medium size, attached at one edge. The natural folds of the skin were everywhere exaggerated. There was much infiltration of the lower half of the fore-arm and the hand, with thick scales, and numerous fissures. There was a similar condition on the palms and the soles. The lymphatic glands were enlarged, especially those of the groin, which could be distinctly seen with the naked eye. The mucous membrane of the mouth was thickened, of pearly color, and thrown into folds corresponding to the teeth. A smear of blood taken showed an increase of eosinophiles. During the next four months the patient's condition remained about the same, with the exception that there was some slight scaling, and much relief was obtained from treatment, especially from the use of starch baths.

In this case there was a marked tendency to chilliness, and the patient required his room to be kept at a very high temperature.

On the 28th of November it was noted that the liver was palpable two inches below the costal border, and the spleen also was palpable three and a half inches below the costal border. At this time there began to be bleeding from the mucous membrane of the nose and mouth, and a certain amount of purpura appeared on the lower legs, cheeks, and forehead. There was a rise of temperature,

and the patient began to grow weaker. On the 22nd of December the redness of the skin had entirely disappeared and the exfoliation was very much less. Many parts of the body were entirely free from scaling for a short time, and then the scaling would recur. The character of the scaling had also changed from moderately thick, to very thin, branny scales. The patient was much emaciated, but there were no signs of atrophy. The urine was normal.

The patient complained much of pain in and about the buttocks. There was some blood in the sputum. The irregular temperature, for which no cause could be found on physical examination, continued.

After gradually failing, the patient died on December 26.

AUTOPSY, $5\frac{3}{4}$ hours post-mortem.

ANATOMICAL DIAGNOSIS:

Dermatitis exfoliativa.

Purulent bronchitis with few small abscesses of the lower lobe of the left lung.

Chronic pleuritis.

Fatty degeneration of the myocardium.

Slight dilatation of the heart.

Chronic hyperplasia of the spleen.

The body of a man fifty-seven years of age, 169 cm. long, well developed, emaciated. Head not examined.

The incision is restricted to a twelve inch cut in the abdominal wall, and is so made.

TRUNK: The skin of the face, trunk, and extremities generally is more or less covered with thin grayish-white, dry scales and flakes of superficial epidermis. In many places there are small irregular, superficial losses of the skin with red bases. Over the anterior aspect of the thighs the skin presents rather large, brownish-red scaling patches. On the posterior surfaces of the left thigh and a little above the popliteal space there is a loss of substance of the skin, measuring five by three centimetres.

On section the subcutaneous fat is very slight in amount, and the muscles are rather thin and pale.

PERITONEAL CAVITY: Is free from fluid, and the peritoneum is smooth, and shining. The appendix is not remarkable.

PLEURAL CAVITIES: Free from fluid. The lungs are bound down by fibrous adhesions. The bronchial lymphatic glands are enlarged, dark red, and pigmented. There is a small piece of tissue in the position of the thymus gland, which resembles somewhat the tissue of that organ. A piece is taken off and microscopically examined.

The trachea, and bronchi are not remarkable, except that the bronchi leading to the lower lobe of the left lung show a reddened mucosa, and contain a considerable amount of yellow pus. The pleura of the right lung in places shows fibrous thickening, and the upper lobe on section presents no areas of consolidation. The substance of the lower lobe of the lower part in relation with the bronchi, shows two or three small collections of yellow pus.

HEART: Weight, 285 grams. Pericardium is not remarkable. On section the myocardium is flabby, and of a pale brownish-yellow color, mottled in places with small brownish-yellow areas. The left ventricular wall measures 1 mm. The right ventricular wall, 3 mm. The mitral valve circumference, 10.5; aortic, 7.5; tricuspid, 12.5 cm. The valves are not remarkable. The cavities are slightly enlarged. The coronary arteries are free and smooth. The aorta is fairly smooth.

LIVER: 1500 grams. On section the tissue is firm, pale, and homogeneous in appearance. No stones in the gall bladder. The bile ducts are free.

PANCREAS: On section is not remarkable.

SPLEEN: 600 grams. The upper lobe of the organ is firmly bound to the diaphragm by fibrous adhesions. The capsule shows fibrous thickening in places. On section the tissue is firm, and quite red in color with visible follicles, and rather prominent trabeculae.

ADRENALS: Not remarkable.

KIDNEYS: Combined weight, 280 grams. The capsules strip leaving a smooth surface showing foetal lobulation. On section the tissue is firm, very pale with reddened markings. The cortex measures 5 mm.

URETERS: Free.

The bladder, prostate, and seminal vesicles on section are not remarkable.

The stomach on section presents no lesions. No ulcers of the lower end of the ileum. The retro-peritoneal lymphatic glands generally are enlarged, dark red in color, and are firm.

In the skin, in many places, there are large areas showing complicated tattoo markings.

BACTERIOLOGICAL REPORT. Cultures on blood serum. Heart: not taken owing to incision. Liver: slight growth of colon-like bacilli. Spleen: no growth.

MICROSCOPICAL EXAMINATION. **THYMUS:** Islands of thymus tissue are present in which the pathological elements are numerous.

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Lymph node: The sinuses are well shown by being filled with blood. The seminal vesicles are not remarkable.

LIVER: Some widening of the capillaries in the central portion of the lobules.

SPLEEN: General diffuse increase in the interstitial connective tissue which is also infiltrated with small cells.

The outline and the follicles are indistinct on account of increase in their interstitial tissue. A few follicles are largely transformed into fibrous tissue. No pigment deposits.

KIDNEY: Some œdema.

SKIN: Three sections show atrophy of the epidermis, and infiltration of the corium about the sweat glands with small cells.

CASE 2. The patient was a man of sixty, born in Russia, a brass finisher by occupation. He first came to the hospital in February, 1900, for an eczema of the hands which had been present for several years.

He was admitted to the ward for skin diseases on December 7, 1904. At this time the whole surface of the body had become affected, the skin was everywhere much thickened, dry, and covered with fine scales. There was considerable hyperæmia. The inner sides of the fore-arms were especially thickened, scaling, and fissured, and the neck also was especially involved. The legs were much excoriated from scratching. The epidermis of the palms was greatly thickened, the nails were thickened, brittle, with transverse striæ. There was much thickening of the skin of the soles of the feet and the nails of the toes were greatly thickened, and highly polished. There was considerable itching, and at first some mental symptoms, which disappeared, however, and the patient was discharged on March 8, 1905, much relieved, in that the scaling, and infiltration were much less, although by no means wholly relieved.

On May 19, 1905 he was readmitted as his condition had become much worse. At this time he was somewhat the same as when he first came in, as the skin of his whole body was red, thickened, and covered with small fine scales. The fingers and palms were much swollen, and the scaling was in much larger masses.

During the next two years he was readmitted three times to the hospital in a good deal the same condition, and with about the same results as before. His temperature and pulse were normal, and repeated examination of the urine showed that it was normal. At one time the white blood count was considerably raised.

He was last admitted on July 30, 1907, and at this time he had just experienced an acute exacerbation of his skin affection, and the skin everywhere was in a high state of congestion, freely desquamating. His condition at this time was pretty good. Physical examination of his internal organs was negative. There was a slight general enlargement of the lymphatic glands. The urine and blood were normal. On August 3rd the patient began to have some symptoms of vomiting, and diarrhoea, and died rather suddenly on August 6th.

There was no autopsy, and the symptoms were mainly those of intestinal obstruction.

CASE 3. This patient was a man of twenty-four, born in Prince Edward's Island, who entered the hospital on May 24, 1907. There was a very clear history of a primary lesion five months previously, followed by a papular eruption over the body. He had been treated by mercury internally, in just what dosage could not be ascertained. He was also given a mercurial ointment which he applied to the lesions. Almost immediately, according to his account, after using the ointment the character of the eruption changed, his skin becoming everywhere intensely reddened, infiltrated, and scaling. He had had some falling of the hair.

When admitted his general condition was fairly good, although he was somewhat nervous and tremulous. The inguinal glands were considerably enlarged. The internal examination was negative. The skin of the whole body, except the scalp, was a brilliant but dusky red, and covered freely with scales which were coming off in large sheets from the arms and legs, and especially the hands and feet. On some parts of the body the desquamation was fine and branny, but in most places the scales were large. On the back there were distinct patches the size of a dollar, which were reddened and more scaly than the surrounding skin.

After the patient had been in the hospital a few days the condition of the skin was somewhat improved, but it was found that the liver and spleen were both enlarged. During this time the temperature, which was normal in the morning, rose to 102° to 103° at night. On January 5th it was noted that the nails of the fingers and toes were becoming loose in their beds. Despite his rise in temperature the patient felt remarkably well, and the appetite was excellent. There were, especially on the arms, numerous small papules of linear arrangement, having a somewhat angular base.

Small islands of apparently normal skin had begun to appear on the body, which during the next week increased in size, and became deeply pigmented. The feet and hands became quite painful on account of numerous cracks, which bled occasionally. On July 7th, it was noted that the patient was losing weight, in spite of an excellent appetite and a sufficient amount of food eaten. The temperature at this time, and later, varied from 100° to 101° in the morning, and 104° to 105° at night.

On August 1st the patient had lost weight very rapidly, and seemed little more than skin and bones. No distinct atrophy, however, was detected. He appeared bright and had had no delirium, except once or twice when the temperature was 104° or 105°. His nails had all been shed, and only a few hairs were left on his head. His hands and feet were still very painful. On the 18th of August he developed some diarrhoea and his temperature fell to 96°. During this time the condition of his skin was much improved, and towards the end the islands of sound skin had rapidly increased, and there was very little desquamation left. New nails began to form, although the hair on the head was not reproduced. He continued to fail, and died on August 28th.

The urine on May 25th, contained 3.2% of urea; May 27th, 3%; July 10th, 2.6%; July 22nd, 2%.

BLOOD EXAMINATIONS. May 28th.—9.30 A. M. Hæmoglobin, 80%; polynuclear leucocytes, 70%; eosinophiles, 2.5%; mononuclear leucocytes, 27%; mast celis, 0.5%. July 10th, 3 P. M.: Hæmoglobin, 80%; polynuclear leucocytes, 70%; mononuclear leucocytes, 29%; eosinophiles, 1%; Widal, negative. July 22nd, 9 P. M.: Hæmoglobin, 70%; polynuclear leucocytes, 75%; mononuclear leucocytes, 24%; eosinophiles, 1%; Widal, negative.

AUTOPSY, 13½ hours post-mortem.

ANATOMICAL DIAGNOSIS:

Dermatitis exfoliativa.

Obsolete tuberculosis of bronchial lymphatic glands.

Anæmia.

Hyperplasia of spleen.

Streptococcus infection.

A man twenty-four years of age, 184.5 cm. long; well developed, and markedly emaciated. The lower extremities are flexed. Head not examined.

TRUNK: The skin is everywhere dry and scaling. In many places there are smaller and larger reddish scales, and in numerous other places there are small superficial lesions of the epidermis. The skin everywhere shows a dull, dirty, brownish mottling. The hair of the body and head is practically absent. The muscles are thin and pale.

PERITONEAL CAVITY: Not remarkable. Appendix normal. The anterior margin of the right lobe of the liver is at the costal border in the right mammillary line. Diaphragm; right side, 4th interspace; left side, 4th rib.

PLEURAL CAVITIES: Free from fluid. The lungs are free. The bronchial lymphatic glands show marked pigmentation, and in two of them, which show marked enlargement, there are many smaller and larger calcareous, and caseo-calcareous masses. The trachea, bronchi, and lungs on section are not remarkable.

HEART: Weight 209 grams. Pericardium is not remarkable. The organ is small. On section the myocardium is fairly firm, and pale brown in color. The valves and cavities are not remarkable. The coronary arteries are free. There is very little blood in the heart or the great vessels, and this is pale and watery.

AORTA: Small and smooth.

LIVER: Weight 1384 grams. The organ is not remarkable. No stones in the gall bladder. The bile ducts are free.

PANCREAS: On section this is not remarkable. The duct of Wirsung is free.

SPLEEN: Weight 306 grams. The organ is enlarged, and on section the tissue is quite firm, and of a dark brownish-red color with visible follicles and trabeculae.

ADRENALS: Not remarkable.

KIDNEYS: Weight 299 grams combined. The capsules strip, leaving a smooth, pale surface. There is some injection of the venæ stellatae in places. On section the tissue is firm, pale, and the markings are reddened. The cortex measures 6 mm. The organs are not remarkable. The ureters are free.

The bladder, prostate, seminal vesicles and testes, on section present no lesions. The œsophagus, stomach, intestines, on section are not remarkable except that the walls of the stomach and intestines are pale and thin. A portion of the thoracic spinal cord was removed, but on section it presents no gross lesions.

BACTERIOLOGICAL REPORT. Cultures on blood serum. Heart: Slight growth of streptococci. Spinal Canal: No growth.

MICROSCOPICAL EXAMINATION. **LIVER:** Many phagocytic endothelial cells found in the liver capillaries. In a few places small aggregations of these endothelial cells, together with cells of the lymphoid series, replace liver cells. These aggregations of cells are like those seen in the liver in cases of typhoid fever.

SPLEEN: Trabeculae prominent. In the splenic pulp is found large, hyaline, pale brown pigment in the form of globules.

KIDNEY: Not remarkable.

CASE 4. The patient was a man of sixty, born in Massachusetts, a painter by trade. Thirty years ago he had had "painter's colic," twenty years ago, typhoid fever. Other than this he had always been well. Present affection had existed for eight years, of the same character as at present, although not absolutely universal.

When admitted to the hospital October 2, 1907, physical examination of the internal organs was negative. The condition of the skin was one of absolutely universal scaling, the scales being large, and thick. The underlying layers of the skin were hyperæmic, and somewhat infiltrated. There was a tendency to cracking in the flexures. The scalp was thickly matted with large, dry scales. On October 6th it was noted that the patient had slept very little since entrance, and had had more or less pain in the feet, especially when he tried to walk. The skin was much improved, most of the scales having been removed. The desquamation was finer than on entrance. During the month of October the patient continued in much the same condition, universal scaling and hyperæmia being present, and his general condition being pretty good. His appetite was fair, and he was up and about the ward. About the first part of November he began to fail without known cause, or other symptoms. The skin continued in about the same condition, if anything somewhat improved. During the first three weeks of November he failed rapidly, and died on the 21st of the month after two days of coma. There was no rise in temperature, nor other symptoms.

In this case the urine was normal, and the temperature absolutely normal until the end. The pulse was 80 to 90, and the respirations 20. The loss of weight was only about eight pounds.

CASE 5. The patient was a married woman sixty years of age, a Nova Scotian by birth. She was admitted to the Skin Ward of the Massachusetts General Hospital, October 23, 1906. Her history showed that she had had no previous illness of importance.

She had had six children, all of them healthy. Her present affection had been present for fifteen months, beginning on the back, and extending rapidly to the chest, abdomen, and legs. The face and hands were the last to become affected. On entrance the skin of the whole body was uniformly reddened, and scaling. In one or two places there was slight exudation. Other than this condition of universal scaling there were no symptoms. Pruritus was not marked. Examination of the internal organs was negative, and the urine was normal.

During the following month there was considerable improvement in the general condition, and the appearance of the skin. On the 29th of December there was a change for the worse, the patient complaining of cold and cough. On the 30th, examination of the chest showed numerous loud râles throughout the chest. There were rapidly increasing dyspnœa and cyanosis. Death occurred on the morning of the 31st.

In this case there was a very slight rise in temperature until December 2nd, and then there was a nightly rise to about 101°, returning to normal in the morning. The pulse was about 100 throughout, the respiration 25. The urine was practically normal on October 27th, and the specific gravity was 1018. On November 27th, it was 1022, and on December 1st, 1020.

AUTOPSY, 12 hours post-mortem.

ANATOMICAL DIAGNOSIS:

- Dermatitis exfoliativa.
- Broncho-pneumonia.
- Cysts of the liver.
- Diverticula of the jejunum.
- Slight fatty metamorphosis of the liver.

A woman sixty years of age, fairly well developed, poorly nourished. Head not examined.

The skin of the head and trunk everywhere is covered with whitish scales which peel off in smaller and larger flakes, leaving a smooth surface underneath.

The incision is restricted to the abdominal wall, and is so made. The organs are not removed from the body.

PERITONEAL CAVITY: Free from fluid. The peritoneum is smooth, and shining. The appendix is not remarkable. The anterior margin of the liver is two finger-breadths below the costal border of the right mammillary line.

PLEURAL CAVITIES: Free from fluid.

LUNGS: The left lung is apparently free. The right lung is firmly bound down. The left lung on section presents no areas of consolidation, and yields a considerable amount of reddish frothy fluid. The tissue of the right lung on section shows here and there smaller and larger, more or less resistant areas, the surfaces of which are dark greyish-red, granular, and fade out somewhat indefinitely into the surrounding lung tissue, which is slightly leathery, and yields a considerable amount of dark red fluid material. The condition is most marked in the lower lobe.

The bronchi on section show reddened mucosa, with a moderate amount of reddish muco-purulent material.

HEART: Is of normal size for the individual, and to the touch is not remarkable.

LIVER: The liver is not enlarged, and in three or four places on the surface, cysts are visible. On section the largest of these measures 3 cm. in greatest dimension, and the cystic cavities contain pale, clear fluid. The walls of the cysts are pale, rather thin, and membrane-like. The liver tissue, immediately about the cyst wall, shows, grossly, no evidence of change. No stones in the gall bladder.

PANCREAS: Not remarkable.

SPLEEN: Is rather small and soft.

ADRENALS: Not remarkable.

KIDNEYS: Rather small, and on section are not remarkable. The cortex measures 5 mm.

Along the mesenteric insertion of the jejunum, the wall of the intestine gives off a number of smaller and larger pouch-like portions projecting into the mesentery. When distended these are somewhat flask-shaped. On section the cavities of these flask-shaped pouches are continuous with the lumen of the intestine. The rugae are well marked at the entrance of the pouches, but within the pouches the mucosa is fairly smooth, and the walls of the pouches are much thinner than the wall of the intestine. The larger ones of the pouches measure 2.5 cm. by 1.5 cm. by 1.5 cm.; the smaller ones 5 mm. by 5 mm. by 3 mm. These dimensions are over all. Portions however, measure 8 mm. in diameter. The larger part which rests in the mesentery measures 1.5 cm. in diameter. An attempt to produce some diverticula in the wall by force failed. The intestines otherwise are not remarkable.

Further dissection restricted.

MICROSCOPICAL EXAMINATION. LUNG: Some bronchial pneumonia is visible on section.

LIVER: Fatty degeneration in the peripheral portions of the lobules. The cysts are lined with a low epithelium.

SKIN: Marked desquamation of the epidermoid cells. Slight infiltration of the corium with small round cells, but nothing else remarkable.

It seems to me that these five fatal cases add to the difficulty of dividing generalized exfoliative dermatitis into sharply cut groups. Typical cases of pityriasis rubra of Hebra are rare. A very marked example was described by me in the article heretofore mentioned. In the case referred to all the cardinal symptoms of Hebra's pityriasis rubra were present, including long duration and the marked atrophy at the end. In none of these five cases was there any marked atrophy similar to that seen in a case of typical pityriasis rubra of Hebra, although in some there was great emaciation.

As to the chronicity, in case No. 2 the affection had lasted for at least three years, and in case No. 5 it was pretty evident that it had had a course of more than a year and a half. In case No. 1 the duration was about a year. In case No. 4 it was difficult to determine the duration of the existence of a universal eruption, but it was probably considerable. In these cases, which exhibited marked chronicity, absence of a final atrophic state of the skin is practically all that divides them from the pure type of pityriasis rubra of Hebra. The question naturally arises whether they should be excluded from this type on account of the absence of that one symptom. Case No. 2 might to some minds be regarded as an example of Bazin's herpétide exfoliative, in as much as he had had for many years a preceding eczema, which later was transformed into this generalized condition of exfoliation. Is however, the simple fact that a generalized eruption has followed a localized cutaneous affection, sufficient grounds for giving it a separate place in classification? Again, case No. 3 illustrated the fact that a case of dermatitis exfoliativa beginning from a dermatitis produced by an external irritant, in this case mercurial ointment, may run as fatal and typical a course as cases which have arisen in different ways. In this case, from the history, there was little doubt that the starting point was an intense dermatitis, and perhaps toxæmia, produced by the inunction of mercury. Moreover, Crocker, in his text-book, asserts that he has seen similar occurrences.

CASE 6. This patient was a man of fifty-five. He was born in New Brunswick, and his occupation was that of clerk. He was admitted to the hospital on October 10, 1908, with a history of having first been affected eight weeks previously. The thickening began on the scalp as a dry, scaling eruption which rapidly spread over the whole body, so that for the past four weeks the eruption has been universal.

His condition on entrance was fair. Physical examination was negative, except for a few scattered râles in the chest. The pulse was of good volume and tension, and the heart sounds of good quality. The skin everywhere was red, and somewhat infiltrated, and desquamating profusely in large papery scales. There was very little itching, but the skin felt tight, and uncomfortable. There were numerous wrinkles everywhere, following the natural lines of cleavage.

The patient continued to grow weaker, and exhibited some symptoms of nausea and vomiting. The râles in the chest became more numerous, suggesting a slight œdema of the lungs. The urine was normal. He was somewhat delirious, and his condition was considered very critical. On the 23rd of October it was noted that the patient had had hiccup for several days almost continuously, which was very little relieved by drugs. On November 1st he began to improve slowly, although the skin was still freely desquamating. From this time on he improved rapidly, the desquamation and redness becoming gradually less, and the patient gradually gaining weight. He was discharged on the 3rd of September. At this time the skin was still scaling in places, especially on the scalp, and on the back, but the rest of his skin was comparatively normal.

A few weeks later he reported that his skin was entirely well, and that he had returned to his work.

From the date of entrance to November 7th the temperature varied from 98° in the morning to 100° at night on an average. From the 7th to the 13th, there was an evening rise to about 101.5°, with only slight morning remissions. The pulse varied from 80 to 90, the respiration from 20 to 25. The urine was normal throughout.

HISTOLOGICAL EXAMINATION OF A PIECE OF SKIN EXCISED. Sections stained with haematoxylin and eosin, and eosin and methylene blue showed everywhere a desquamation of the horny layer in long and short strips. Many of the nuclei in the scales were still visible, although not sharply defined. In one or two places a collection of small cells of the character of leucocytes could

be made out lying just below the horny layer. No granular layer, properly speaking, could be made out. The rete was increased in thickness throughout the section, the interpapillary prolongations appearing to be the portion especially affected. There was a considerable number of leucocytes lying between the epithelial cells. In the basal cells of the rete, there was a considerable number of mitotic figures. Here and there in the middle layers of the rete, there appeared a cell sharply differentiated from the normal epithelial cells, in being brightly stained with eosin.

In the corium, in the elongated papillæ, and in the upper portion of the papillary layer, dilated vessels surrounded by collections of cells were to be seen. These cells were oval and spindle shaped types of connective tissue cells, together with small round cells with nuclei almost completely filling the cell body. Here and there eosinophilic cells could be distinguished.

With regard to the glands of the skin nothing abnormal could be detected.

The elastic tissue was normal, with the exception that it did not extend, or but very feebly, into the hypertrophied papillæ. The connective tissue was normal.

It was impossible to detect micro-organisms of any kind.

CASE 7. This patient was a boy of twelve, born in Massachusetts. Family history negative. The patient had had no previous illness except measles at the age of five years. The first trouble with the skin appeared three years ago when the patient was nine years of age. Just what the character and duration of this first attack was could not be ascertained, but it was certain that the trouble at that time was universal, disappeared entirely, and was followed after an interval by another attack more severe and protracted than the first. During the last three years the patient has had four attacks, the present one being the fifth. When admitted to the hospital on July 14, 1906, the skin was universally affected. It was dry, and of a deep red color with profuse desquamation everywhere. The scalp was covered with thick scales, as was also the face. On the trunk and limbs the exfoliation was of a larger type. The temperature was 102° , pulse 110, the respirations, 25. There was a general adenopathy, the cervical, axillary, epitrochlear, and inguinal glands being hard, and readily palpable. Examination of the internal organs was negative, with the exception of apparently slight enlargement of the spleen.

After entering the hospital there was a pretty rapid improvement in this case. The skin gradually healed until the patient was discharged on September 11th, with the skin quite normal.

From the 14th to the 24th of July there was a rise of temperature from 99° in the morning to 102° at night. After that it was normal, as was the pulse and respiration. The urine was repeatedly tested during the height of the attack, but no changes of importance were detected. On July 15th examination of the blood showed 16,000 leucocytes; haemoglobin 85%. On July 23rd, the blood count showed 4,900,000 red corpuscles; haemoglobin, 80%; leucocytes, 9,600, of which there were polynuclears, 80%; lymphocytes, 18% and eosinophiles, 2%.

On April 18, 1907, the patient was readmitted on account of a fresh attack. The history was that it had begun three weeks previously on the sides of the chest, soon involving the abdomen and back.

It is seen distinctly that the eruption begins as very minute, closely aggregated papules, which speedily become vesicular, and slightly pustular. These vesicles, and vesico-pustules rapidly become confluent, rupture, and give rise to the condition of exfoliation, which was the only stage observed in the preceding attack. The patient is a rather intelligent boy, and asserts that in all his previous attacks the desquamation has been preceded by the appearance of these minute, rapidly coalescing vesicles, and vesico-pustules.

On admission, the skin of the trunk which had been first affected, was in a condition of active exfoliation, and quite red in color. On the extremities the initial eruption of small, closely aggregated vesicles, and vesico-pustules was present.

The patient's condition was fairly good, although he felt weak, and there was a great tendency to chilliness. Physical examination was negative. There was no itching. The process continued to spread until the skin of the whole body had become affected, and were everywhere scaling, the fine vesicular eruption having everywhere preceded the exfoliation. From these vesico-pustules the staphylococcus aureus and albus were cultivated.

By April 20th the face was beginning to clear up, and the epidermis was coming off from the hands and feet in large sheets. On the 23rd, examination of the blood showed haemoglobin 75%; red blood corpuscles, 4,224,000; white corpuscles 21,200, of which 70% were polynuclears; 28% large mononuclears; 2% eosinophiles.

On April 26th another culture from a new lesion showed staphylococcus aureus. During this time the temperature had been irregularly elevated. On May 2nd the haemoglobin was 73%; red corpuscles 4,120,000; white corpuscles 15,200, of which 58% were polynuclears; 30% large mononuclears; 11% small mononuclears; and 1% eosinophiles.

On May 4th the haemoglobin was 75%; the white corpuscles 18,600, of which 61% were polynuclears; 9% small mononuclears; 25% large mononuclears; 4% eosinophiles; 1% mast cells, with numerous unrecognized degenerative forms. A slight systolic murmur was heard at this time in the 3rd and 4th interspaces close to the sternum. On May 7th the haemoglobin was 75%; the white blood count 19,200, of which 74% were polynuclears; 18.5% large mononuclears; 5% small mononuclears; and 2.5% eosinophiles.

From this time on there was a continual improvement, the exfoliation and redness becoming less and less marked. Islands of normal skin began to appear on the chest and back, which steadily increased in size. There was at this time, as in the preceding attack, a general glandular enlargement. On June 27th the patient was discharged much relieved to the Convalescent Home in Waverley. There was still some desquamation from parts of the body, although large areas were completely normal. All the nails of the fingers and toes had been lost, also much of the hair and eyebrows. His general condition was good.

During the last attack the temperature, for the first two weeks rose to 102° at night, with an average of 100° in the morning. The pulse was about 100, respirations 20. After that the temperature, pulse, and respirations became normal. For three weeks daily examinations of the urine were made. The specific gravity was, on an average, 1020, and there was a diminution in the amount of urea. The amount of urea had increased gradually to the normal at the end of the attack, having at one time been decreased by one half.

Inquiry a year and one half later showed that the patient had had no further attack.

With regard to case No. 6 it is certainly very difficult to separate it from the preceding fatal cases. His condition at one time was very serious, and very little expectation of his recovery was entertained. In this case a careful histological examination of a bit of skin was made, the results not differing materially from those

made by other observers in the case of generalized dermatitis exfoliativa of the "Erasmus Wilson" type. At the time the histological examination was made the condition of the patient was very serious, and I was much interested to see if the condition described by Leloir and Vidal could be determined.

Leloir and Vidal found by the histological examination of three cases of the fatal type of chronic exfoliative dermatitis (Bazin's herpétide exfoliativa), a condition of the corium which they regarded as almost pathognomonic. This condition consists in a destructive change in the connective tissue of the corium, particularly about the blood vessels. A large number of lymphatic spaces are dilated and about them the connective tissue fibres show the same alteration. I have never seen the same alterations in any of the cases I have examined histologically, although some of them were of the type of Bazin's herpétide exfoliativa, nor were they present in case No. 6.

With regard to case No. 7, there may be some question as to the propriety of regarding it as belonging to the class of dermatitis exfoliativa, in as much as some, perhaps all of the out-breaks began by the appearance of very small pin-point sized vesicles and vesico-pustules, which were rapidly followed by a typical exfoliating dermatitis, clearing up after running a certain course. From a careful study of the case in its various phases I am pretty well convinced that this case is to be classed with the form described as recurrent scarlatiniform dermatitis, a form that in my opinion has more claims to be separated from the general class of exfoliative dermatitis than many of the others, and I do not regard the fact of its beginning in this way as throwing it out of this class. Moreover other observers, notably Besnier, have noted the occasional occurrence of vesicles in this affection.

NOTES ON THE TREATMENT OF ALOPECIA AREATA AND DERMATITIS EXFOLIATIVA.*

BY DR. GEORGE T. JACKSON, New York.

WE all know the difficulty of determining the value of a given remedy in the treatment of such a disease as alopecia areata, which often recovers of itself; leaves us in doubt whether the cure has been effected by the kindly forces of nature alone, or with our aid.

During the past four or five years I have treated eight cases of this disease with the Piffard iron spark-gap lamp. This is a small lamp made of rubber and furnished with a handle so that it can readily be held in the hand. It is set in action by attaching it to a coil. The current being turned on, fat sparks will be seen to fly between its iron posts. These are said to be very rich in ultra-violet rays and even more in rays whose nature is undetermined. The lamp is furnished with a quartz lens. This I always remove when using the lamp as it interferes with the efficiency of the lamp, allowing only the ultra-violet rays to pass through. It is my custom to hold the lamp over the part to be treated and just far enough off to prevent sparking, and to let the current run for from five to ten minutes. As an occasional spark is apt to fly off at any time, when the lamp must be quickly moved from the patient's head, I have not dared to trust the lamp to an artificial support. These occasional sparks are not dangerous, but unpleasant to the patient. The sittings I have repeated every two to four days. After a few sittings the part exposed to the light is sometimes reddened, sometimes tanned, just as if it had been exposed to the sun. There is a certain amount of heat thrown out by the lamp. I have wondered if this heat may not play a part in producing the effects of the lamp.

CASE 1. This was a school girl, eighteen years old, who had a large goitre. I saw her first in consultation on June 2, 1904. At that time she had had complete alopecia areata of the scalp as well as of the body for eighteen months.

* Read before the 33d Annual Meeting of the American Dermatological Association, Philadelphia, June 3-5, 1909.

After seven months of various kinds of treatment, on February 1, 1905, I began the use of the lamp, and gave her twelve sittings, when she had to return to school. I gave her then an ointment containing half a grain of pilocarpin to the ounce to use daily. Two months afterward I saw her again. She had quite a lot of long hair, and many follicles showed signs of coming hair.

CASE 2. This was a school girl, twelve years old, with a generalized alopecia areata. For months before I began the use of the lamp she had been coming to Dr. Fox's clinic, and had received many kinds of treatment. On February 16, 1905, I began the use of the lamp. I divided the left side of the scalp into four areas, and exposed these to the lamp every third day. I gave her sixteen sittings, then prescribed an ointment of one drachm of the extract of pilocarpin in one ounce of sulphur ointment to be used on the whole scalp.

Three months afterward there was a growth of hair over the whole head which was very much heavier on the side on which I had used the lamp. The improvement continued for a few months, the hair on the lamp side always being the heaviest. Then all the hair fell out again. In October, 1905, I gave her twenty sittings, which caused the hair to grow over the whole of the lamp side, the other side showing little change. In about a month all the hair fell out again.

CASE 3. This was a married woman of forty years of age, who had a number of attacks of alopecia areata during the previous ten years. The attack for which she consulted me began three years before. There were a number of variously sized patches over the scalp, some of which showed signs of repair.

On June 21, 1905; I began the use of the lamp. After nine sittings the hair was growing in all the patches. After fourteen sittings she went out of town for the summer with the hair growing nicely. On September 30 she called to show me her scalp. She had a strong growth of hair on all the patches.

CASE 4. This was a doctor, forty years of age. He showed me a patch of alopecia areata three-quarters of an inch in diameter that had appeared four days before coming to my office.

On November 25, 1905, I began the use of the lamp. In twenty sittings the size of the patch had been reduced to one-quarter of an inch. He then ceased his visits.

CASE 5. This was a man twenty-seven years old. Before coming to me he had had the disease for eighteen months. He had been treated in many ways by a competent dermatologist.

On October 7, 1907, I began the use of the lamp. After five daily exposures lanugo hairs appeared in all the bald places. After seventeen exposures hair was growing in all the patches. The patient had to return to his out-of-town home, and the hair fell out again.

CASE 6. This was a man twenty-five years old, with nearly complete alopecia areata of his scalp of three months' duration.

October 17, 1907, I began to use the lamp. After six exposures lanugo hairs began to appear. The man could not give the time to the treatment, and was lost sight of.

CASE 7. This was a man twenty-five years of age, who had nearly complete alopecia areata for eighteen years, and had received many kinds of treatment.

March 18, 1908, I began to use the lamp. After twenty-three exposures there was a marked increase of hair over the whole scalp. The man was a neurasthenic with a foolish mother who imagined that the light made him too nervous to continue with the treatment.

CASE 8. This was a doctor twenty-seven years of age. The disease began on the chin fifteen months before he came to me. Later his scalp was invaded, and he had a number of patches. On July 13, 1908, a patch appeared on the tonsure region, and one week later a second one came near it.

On September 28, 1908, I began the use of the lamp on the vertex patches. After twenty sittings, in the course of six weeks, the hair was growing in both of them. On July 7, 1908, a patch came on the middle of the forehead. For purposes of comparison I did not use the lamp on this, but treated it with cantharides for a time, and then with the high frequency current and the carbon electrode. This patch showed no signs of recovery, while the other ones went steadily on closing up with normal hair.

A study of these cases convinces me that the use of the iron spark-gap lamp is of decided benefit in alopecia areata. Even in long-continued general alopecia it has brought the hair in, though it has fallen out again. In all the usual cases recovery has taken place. The hair when it comes in is of normal color and texture. The two most instructive cases are No. 2, where the lamp was used only on one side of the scalp, and the growth occurred most on the side so treated; and No. 8, where two patches came about the same time; one recovered under the use of the lamp, and the other showed no signs of recovery even under powerful stimulation. The only objection to the treatment is that it requires the expenditure of a great deal of time. I feel sure that there is virtue in this form of treatment, and I hope that many of you will try it so that we may soon have a sufficient number of cases upon which to found a judgment.

DERMATITIS EXFOLIATIVA.

Through the courtesy of Dr. F. P. Kinnicutt I have recently had the opportunity to try the efficacy of large doses of quinine in the treatment of dermatitis exfoliativa.

On December 10, 1908, Mr. J. was admitted to the Presbyterian Hospital in the service of Dr. Kinnicutt. He was a gardener aged forty-four years. He was a heavy smoker, a moderate drinker, and had had malaria.

On admission his whole skin was red and desquamating, the legs and feet being specially affected. There was scarcely any thickening of the skin, and itching was not pronounced. There was no sign or history of any moisture being present at any time. He had had no other dermatosis. There was marked keratosis of the palms and soles, many furuncles, and some enlarged lymphatic glands. He stated that the disease began four months before admission.

Physically he seemed to be sound, and nothing abnormal was found in his urine. His blood showed 90 per cent. haemoglobin and 17,100 white blood corpuscles. After being in the hospital for a month he had only 78 per cent. haemoglobin, 17,200 white blood corpuscles, and 4,400,000 red blood corpuscles. On December 12th I was asked to see him, and prescribed for him inunctions of sweet oil, regulation of his diet, soda baths, and puncturing the boils with pure carbolic acid. Under these measures conditions improved slowly, and the boils were promptly cured.

In January I read in the *Journal of Cutaneous Diseases*, for September, 1908, Dr. Monk's report of the treatment of exfoliative dermatitis with large doses of quinine. On February 1, 1909, I put the patient on this treatment, giving him five grains every four hours. On February 3rd he took eight grains every four hours and so continued at eight to ten grains every four hours. Improvement was noticed five days after beginning the drug and was continuous. He made such rapid improvement that toward the end of February he left the hospital. Then his skin was almost normal in appearance; that of his ears was glossy and showed fine wrinkles; there was still some keratosis of the palms and soles.

He kept on with the dosage of twenty to thirty grains a day, and in four weeks he seemed to have almost entirely recovered. He bore the large doses without trouble. Under it the night sweats from which he suffered before taking the quinine stopped, and he felt in fine health.

I am indebted to Dr. F. B. Utley, of the House Staff, for the notes on this case.

DISCUSSION

DR. JAY F. SCHAMBERG said he had been for some years interested in actino-therapy in diseases of the skin. It was well understood that

there were many cases of alopecia areata that recovered under any treatment, and often without any treatment. Kromayer, of Berlin, a number of years ago, reported many cases of alopecia areata which were cured by the use of an arc lamp with iron electrodes. Some of these were apparently hopeless cases, of ten and fifteen years' duration, and while in a number of them there were relapses, in others there was more or less complete restoration of hair.

If one could subject a separate series of cases of long-standing alopecia areata to various therapeutic methods, a valuable judgment of their respective values could be arrived at. Personally, Dr. Schamberg said, he did not see how much of the benefit could be attributed to the ultra-violet rays, as they had but very slight penetrative power. Possibly, the blue and violet rays penetrated the tissues and stimulated the nerve supply or increased the vascularity of the parts. If any energy reached the hair papilla itself, it could not be the ultra-violet rays. The speaker said he had had some success with the uviol mercury vapor lamp, in which the most active penetrative energy consisted of blue and violet rays. He had, in some cases, failed utterly with the London Hospital lamp, an apparatus in which the lens is held directly in contact with the skin. He had also failed, in total alopecia, with the ultra-violet lamp.

In the interpretation of results, Dr. Schamberg said, we must always take into account the capricious character of alopecia areata, and hesitate long before attributing the cure to any particular method of treatment.

DR. JAMES NEVINS HYDE briefly reported four cases of dermatitis exfoliativa, one of the Hebra type, in which large doses of quinine were given.

CASE 1. Pityriasis rubra, Hebra type. The patient was a woman, forty years old, who had suffered from the disease for three years. The eruption was generalized, with redness and fine scaling, and the condition was associated with hysteria. Quinine was given in increasing doses, as high as sixty grains *per diem*, covering a period of several months. At times, it seemed to be of some value, but taken as a whole, there was no improvement.

CASE 2. The patient was a man, sixty-three years old, in whom the disease was of two years' duration and had been generalized for seven months. There was a general exfoliative dermatitis of the large-scale type. The entire body was erythematous and covered with an excessive amount of scales. The palms, soles and nail-beds were hyperkeratotic. With the general treatment in the hospital and quinine internally, the patient made great improvement. The man could not tolerate more than forty to sixty grains daily, and this amount produced a moderate deafness. In this case, the treatment apparently produced marked improvement.

CASE 3. The patient was fifty-five years old. His eruption dated

back about one year, and for the past four months it had been generalized. There was a general exfoliative dermatitis of the seborrhœic type. This patient made much improvement under quinine, with other treatment. The dosage of quinine was not pushed, for the reason that the patient was not under the speaker's personal observation.

CASE 4. This patient was a woman, twenty-one years old, in whom the disease had existed for one year. There was a general exfoliative dermatitis, with extensive scaling, the scales being of various sizes. In this case, quinine alone was used, beginning with five grains four times daily and increasing five grains per day. On reaching ninety grains per day, the dosage was kept at that point. No tinnitus was noted. In twenty-one days the patient was entirely well. Several weeks later she returned with a pus infection of the foot. This spread rapidly, and produced an acute dermatitis which, within two weeks, caused a recurrence of the general exfoliative dermatitis. On account of the pus infection, the patient was treated with autogenous vaccines, and made a good recovery.

DR. WILLIAM S. GOTTHEIL said that last winter he had had a case of dermatitis exfoliativa of the Hebra type in the Lebanon Hospital in which up to sixty grains of quinine were given daily. While the skin eruption was benefited by the treatment, the general condition of the patient suffered thereby. He lost his appetite and succumbed in about six weeks, the cause of death being a hypostatic pneumonia. There seemed to be no doubt that the excessive doses of quinine hastened his end, although he had a distinctly severe malignant type of the disease.

DR. GEORGE PERNET said that the case reported by Dr. Jackson appeared to him as belonging to the pityriasis rubra type. The speaker said he had given quinine in several cases of pityriasis rubra and had seen it do a great deal of good. In his cases, Dr. Pernet said, the dosage of the drug should be increased very carefully. If large doses were required, he had found it better and more efficient to administer the drug in an effervescent form rather than in the ordinary way. He ordered it as a double mixture, thus: Pot. Bicarb. gr. xxii, Aq. $\frac{5}{3}$ i., Mist. No. I. — Acid. Citrici gr. xv, Quin. Sulph, gr. iii, Aq. $\frac{5}{3}$ i., Mist. No. II. To be taken together, effervescing, three times a day before meals; increasing the dose of Quin. Sulph. to gr. v. By this method the ill-effects of the quinine were nearly obviated, while the efficacy of the drug appeared to be enhanced. He had no doubt that quinine was one of the best remedies in pityriasis rubra. Still, each case must be treated on its own merits; every feature of the case must be taken into consideration, and no routine method of treatment could be laid down.

DR. JACKSON said that Dr. Piffard, who invented the lamp, claimed that the ultra-violet rays were probably the least active; what the more active rays were had not been determined.

In a case of pityriasis rubra, with atrophy, he did not think that quinine would do any good.

TWO IMPORTANT PARASITES OF THE SKIN.*

By EMILIO COSTA, M. D., Captain of the 14th Regiment (Padua).

DERMATOBIA NOXIALIS

LAST year on my return voyage from South America, on board a steamer, in the service of emigration, I was requested, professionally, to examine a child ten months of age from Palmira, afflicted with several tumefactions of considerable size on the head. She belonged to a peasant family returning to its native country from Brazil, having embarked at Santos. The family has for some years lived in the agricultural colony of Tiberiza, attending to the cultivation of coffee.

The child, maturely born, with dentition regularly developed, remained in good health until a month previous, at which time, as the mother related, after having carried her out to the field where she fell asleep, there appeared the above mentioned tumefactions. The little one became restless, agitated, badly nourished, suffering visibly, crying frequently, long and immoderately.

The swellings presented were three; one at the summit of the head, one near the occipital region, the last lower down, on a level with the margin of the hair. Their form was roundish and the size that of a small mandarine. They were soft in consistency, elastic and resistant, the surrounding tissues being clearly and sharply defined. The mass of the little tumors was not movable upon the tissues underneath; the integument, which covered them, did not present either redness or lesions, excepting at the summit, almost exactly in the centre, where I noticed a small opening, as large as that of a straw of wheat, with regular margin and oozing, under pressure attended with great pain, a frothy, whitish, thread-like serum; not exactly pus nor blood. If they were not boils, what then could they be? I penetrated with well-disinfected forceps into the hole, where I touched a soft substance and drew out some of the long filaments. Was this a case of filaria? Instructed by the preceding, I passed to the second tumefaction. I enlarged

* Translated from the Italian. An extract from the *Medical Journal of the King's Army*, August, 1907.

the little opening with a bistoury, penetrated with a probe, which I turned around inside, and dislodged, with surprise, a large worm, whitish, globular, segmented, shining, a "bicho" (as the emigrants call it in Spanish, and which signifies worm) which, as soon as extracted from its environment and plunged into alcohol (in the absence of formalin) presented the most lively movements. The operation occasioned so much pain that the child was exhausted from crying, therefore I was obliged to defer till the next day the incision of the third little tumor, from which I extracted another worm of exactly the same type as the preceding.

Having disinfected thoroughly the remaining cavities, the infiltrated walls were absorbed at once so that at the end of eight days the skin had resumed its normal aspect and the child became as gay as formerly.

With the means and directions furnished me by Professors Breda and Carazzi, I studied in the Zoological Institute of Padua, the parasite, which, magnified eight times, presented the peculiarities noted in figure 1, which represents its ventral surface. The superior or anterior extremity is the cephalic; the lower, or posterior, the caudal. The entire body, a little wrinkled from the alcohol, is divided into 11 segments and measures in length 14 mm., and 7 mm. in width. It is not flat but roundish; a section perpendicular to the longitudinal axis would result, in fact, in a form almost circular; its surface has the aspect of a soft, raised, whitish substance at the dorsal surface, and yellowish-brown at the ventral and lateral surfaces. The two extremities are curved somewhat towards the ventral surface.

First segment. This includes the head (drawn in) which has two rudimentary tentacles and in the middle two clearly defined prominences, the jaws, furnished at the summit with two strong hooks, visible in the profile, the form of which and peculiarities, like those I shall describe below, are represented in figure 2.

Second segment. At the anterior margin of the dorsal surface are observed 10 hooks in retroversion; none on the lateral; and only one on the ventral side, situated in the furrow that separates the first from the second segments.

Third segment. The anterior margin, carries entirely around it, a complete girdle of 34 hooks in retroversion, disposed regularly in two series on the dorsal surface. One series, in correspondence with the sides and the ventral surface, is interrupted for a short distance upon the medio-dorsal line.

Fourth segment. The anterior margin is furnished with a complete girdle of 62 hooks in retroversion, disposed in two rows. The segment is divided into two halves by a transverse furrow, which occupies all the width of the dorsal surface but becomes lost on the sides. The posterior border of this furrow is furnished with a half girdle of 36 hooks in retroversion, disposed in one range; 17 at the right, 19 at the left of the medio-dorsal line, where the girdle for a short distance is interrupted. Behind this interruption there is a transverse supplementary series of 5 hooks, which are easily differentiated from the others, owing to their disposition in antiversion.

Fifth segment. This is the largest. The anterior margin has a complete girdle of 67 hooks in retroversion, disposed regularly in two series on the dorsal and ventral surfaces, and in one at the sides. There is, besides a half girdle of 33 hooks in retroversion, 18 at the right and 15 at the left of the medio-dorsal line and behind this a supplementary series of 13 hooks in antiversion.

Sixth segment. This presents firstly, a complete girdle of 63 hooks in retroversion, placed in two series on the anterior border; upon the ventral surface are counted 34. Secondly, a half girdle, interrupted by a large hiatus at the medio-dorsal line, of 28 hooks in retroversion, disposed in but one series; 14 on the right and 14 on the left of the medio-dorsal line. Finally a supplementary series of 16 hooks in antiversion, disposed in a single row at the sides and arranged in twos and threes at the medio-dorsal line.

Seventh segment. This has a complete girdle of 62 hooks, disposed in two series in retroversion. Upon the ventral surface are counted 31, the half girdle and the supplementary series being absent, but the posterior border of the segment is furnished with an incomplete girdle of 27 hooks, disappearing at the ventral surface and placed in antiversion.

Eighth segment. In this segment the girdle and the half girdle are missing entirely. The supplementary series, at the dorsal surface, is represented by 11 small hooks in antiversion.

The segments 9, 10, and 11 are not furnished with hooks; but the posterior portion of the 10th and the whole of the 11th are covered with very small thorns scattered irregularly. This last segment offers, also, a cavity in which may be seen with sufficient clearness the stigmatic blades.

Comparing what I have already related with what R. Blan-

chard¹ has specially written on the same subject, it is clear to my mind that the parasite under consideration is the larva of an oestride, the dermatobia noxialis.

The singular malady produced by the larvæ of the diptera (two winged insects) that penetrate and develop in the human skin, was for the first time observed and noted by a French traveller by the name of La Condamine. It abounds in intertropical America, but some rare cases of the same myasis were brought to our notice by individuals affected by the disease, and who were returning from Brazil. Thus at the International Medical Congress held at Rome in 1894, Professor Gradenigo,² in the ophthalmic department, related the history of a child of three months returning with its parents from Brazil. The infant presented an enormous swelling on the upper left eyelid and surrounding tissues which contained two larvæ of dermatobia.

Professor Breda,³ in 1895, described, in a valuable note, another case falling under his observation in the dermatological clinic of the University of Padua.

The parasite has different names in America, according to the regions it inhabits. Because it attacks also the monkey, it is called in Cayenne and French Guiana, ver macaque; in Mexico, ver moyocuil; in Brazil, torcel, from torcere (to twist) on account of the lively movements of torsion the larva undergoes in situ, but our emigrants in the latter country call it, as I mentioned, by a vernacular term, "bicho" or "biiccio," which signifies, worm.

As to the nature of the parasite, it was at first believed to be of a species that attacked man only and was called oestrus humanus⁴ or oestrus hominis;⁵ but later it was discovered that animals also became infested, especially dogs and cattle. Many larvæ may attack an individual at the same time, and Humboldt relates having seen some Indians whose abdomens were literally covered with small tumors

¹ BLANCHARD, R. "Sur les oestrides américains dont la larve vit dans la peau de l'homme." Extr. *Ann. Soc. entomol. de France*, 1892.

² GRADENIGO, F. "Sopra un caso di Dermatobia noxialis in un bambino lat-tant." *Atti del R. Istituto veneto di scienze, lettere ed arti*, T. V. serie VII, 1893-94.

³ BREDA, A. "Dermatobia noxialis, caso clinico." *Estratto dalla Rivista veneta di scienze mediche*, xxii, 1895.

⁴ HOWSHIP, J. "Account of Two Cases of Inflammatory Tumor, Produced by the Deposit of the Larva of a Large Fly (Oestrus Humanus) Beneath the Cutis, in the Human Subject." *Med. Quarter. Rev.*, 1834, p. 174.

⁵ BRAVER, F. "Ueber den sogenannten Oestrus hominis." *Verhandl. d. K. K. zoöl. bot. Ges. in Wien.*, 1860, pp. 57-72.

produced by them. J. Goudot was the first to give a complete practical description, having himself been attacked in the cuticle of the thigh. He had the courage and patience to let the parasite develop in order to study the growth, but with all his courage and love for science he was not able to endure the pain inflicted upon him longer than fifteen days, a pain which he compared to that of a needle quickly thrust into the skin. He called the parasite *cuterebra noxialis*. Blanchard¹ finally designated it by the name of *dermatobia*, and while at first he distinguished four varieties (among which two were well-known, *dermatobia noxialis* and *dermatobia cyaniventris*) in successive works, appearing in 1896² based especially on the observations of Professor P. S. De Malgalhaes of Rio de Janeiro, who succeeded at last in following the complete metamorphosis of a larva. He came to the conclusion that, in spite of the variety of names, all the cuticular larvae of the *dermatobia* species, observed in man and domestic animals, belong to a single species, the *dermatobia noxialis*, which in its perfect state of development is represented in figure 3.

The head of the full-grown fly is of a yellowish color, the eyes very convex and distantly separated, and quite brown; the forehead and the middle part of the cephalic segment are very prominent; the superior surface of the thorax is covered with short black hair; the abdomen is of a dark blue color, metallic and shining. It lives in all the intertropical regions of America and preferably in elevated wooded heights on the banks of streams; for this reason it is very diffused, particularly in the basins of the Amazon and Orinoco. But how does the larva penetrate into the derma and from thence into the hypoderm? Layet,³ in a book recently published, affirms that there is an attached genital mechanism, situated at the extremity of the abdomen formed like an auger and furnished with an egg propeller by which the female deposits one by one the eggs or the larvæ under the skin. But it is proved besides that the larvæ open out from the eggs deposited on the leaves of the trees, attaching themselves also directly to man and beast, as it is true that many of the afflicted declare that they were not conscious of having previously received a wound of any sort.

¹ BLANCHARD, R. "Contributions à l'étude des Diptères parasites." Extr. *Ann. Soc. entomol. de France*, 1896.

² BLANCHARD, R. "Nouvelles observations sur les larves des Dermatobia noxialis." *Bull. Soc. centr. de Med. vet.*, 1896.

³ LAYET, A. *La santé des Européens entre les tropiques*. Alcan, Paris, 1906.

PLATE I.—To Illustrate Article by DR. EMILIO COSTA.

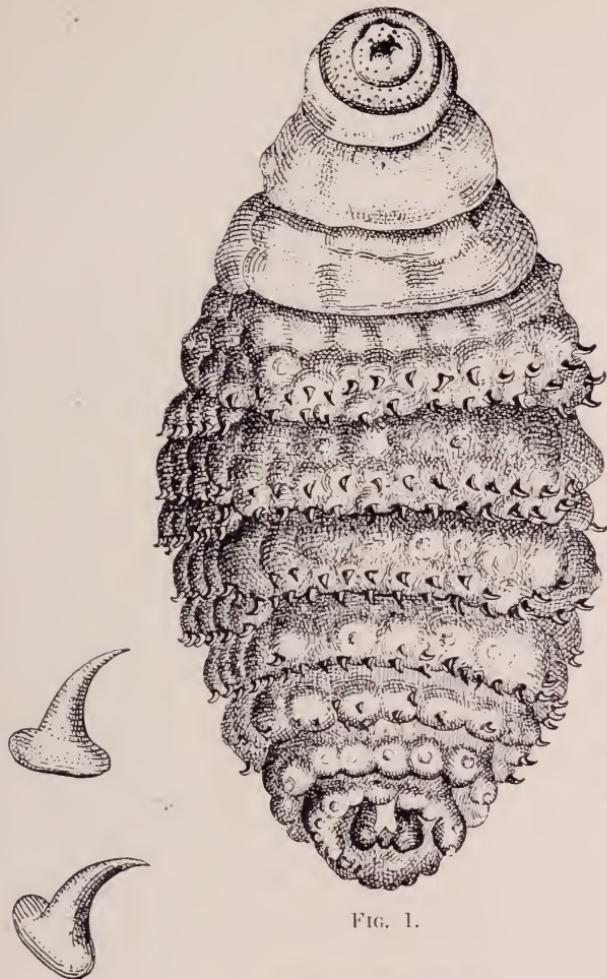


FIG. 2.

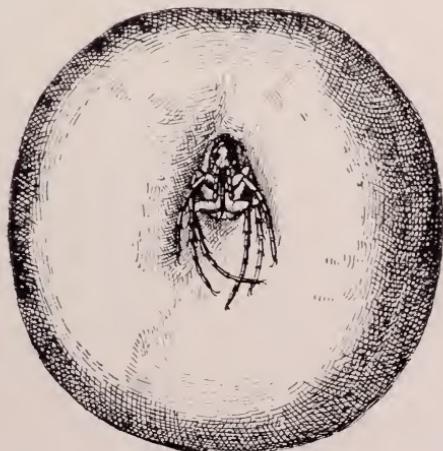


FIG. 4.



FIG. 3.

PLATE II—To Illustrate Article by DR. EMILIO COSTA.



FIG. 6.

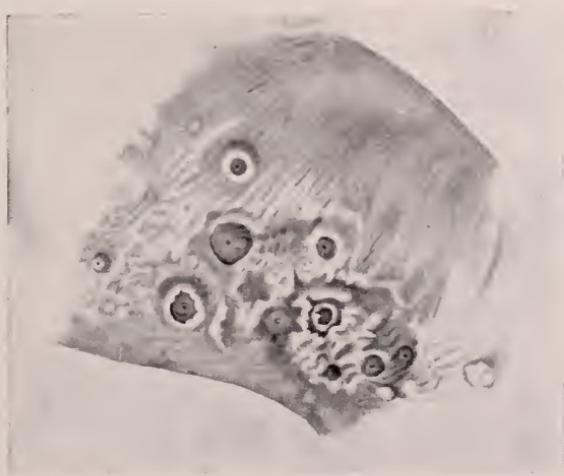


FIG. 7.

Therefore Toussaint gives an explanation based entirely upon a study of the histology of the tumor. The fly deposits the eggs upon the surface of the skin, by preference upon the hairs. The larva, as soon as opened, explores the base of the hair, thrusts it aside and imbeds itself in the follicle, which becomes inflamed and dilated. Then it continues its march inward, constantly distending the follicle, and causing the hair to fall. In proportion as it grows the follicle dilates, but the walls remain intact. These walls in fact, under the constant irritation which they undergo, become exceedingly hypertrophied. Thus is created the fibrous resistant capsule, having a maximum thickness of 60 mm., within which the parasite is enclosed. This capsule is placed in the subcutaneous connective tissue. It is itself formed of a dense stratum of connective tissue fibres infiltrated by great numbers of small mononuclear leucocytes. In its superficial part the capsule continues in a funnel-like canal, almost rectilinear, narrow, full of pus, and which ends at the orifice of the tumor. The entire length of this canal is lined by a stratum of tessellated, stratified epithelium, which joins the epidermis without interruption. The follicular nature of the canal and the capsule (which follows it) is in this way demonstrated. Certainly the walls of the tumor must undergo a high degree of infiltration in order to attain so remarkable a degree of hardness as that met with in my case. Foreign pathogenic germs may complicate the affection, causing phlegmona, circumscribed or diffused, erysipelas and even tetanus.

For the destruction of the parasite there are numerous bloodless means adopted by the natives. One of the most frequent employed consists in the application, upon the tumor, of the juice or paste of tobacco leaves, obtained by mastication or by grinding small pieces with water or brandy. The nicotine dissolved in the liquid penetrates into the tumor and kills the parasite, which has then only to be extracted. In Vera Cruz, however, the natives obtain the same result by asphyxiation. Upon a piece of paper or linen, or upon a leaf, they gather the gelatinous juice from a plant of the order apocynaceæ, a species of the genus *tabernæmontana*, called "lecherillo." They obtain in this manner a paste which is applied to the tumor. The larva when attempting to breathe, draws back toward the obstacle and its tail becomes fastened in the soft tenacious juice. Thus the stigmas are closed, respiration becomes impossible and the parasite dies. The parasite often adheres to the paste so tenaciously that it is only expelled when the latter

is removed. The modern method, if one does not wish to use the bistoury, consists in applying to the tumor a little ball of cotton saturated in a solution of carbolic acid (4%). After half an hour the itching and stinging cease and the day following the parasite can be easily removed in the form of a black elongated mass.

SARCOPSYLLA PENETRANS.

Another singular parasite of the skin for which the attention of the physician (in the emigration service from Brazil) is often required, is the sarcopsylla penetrans¹ ($\sigma\alphaρ\varsigma$, carne, $\varphi\lambda\lambda\gamma$, pulce); our emigrants call it "bicho dos pes" which signifies, worm of the feet.² I shall briefly relate a case referred to me on the same voyage. A child of eleven years presented himself to the visiting physician one day for an ulceration in the region of the nail of the second toe of the right foot. The ulceration had broken margins, was of unequal depth and bled easily. He complained of sharp pain and affirmed that the affection had appeared after having drawn out from underneath the nail, which he had previously raised, a whitish, globular worm, (which he showed me) of the size of a large pea. This I placed in alcohol and studied at Padua. Its peculiarities are represented in figure 4.

It consists of a vesicular, swollen and enlarged sac, with the large enormous head so deeply placed as to have almost disappeared. The walls of the cyst had the aspect of a substance which is soft, moist and undulating. The little one asserted that, before the formation of the ulcer, he experienced in this same place an intense, intolerable itching, which prevented his sleeping at night.

Originally from the coast of intertropical America, the parasite was imported about the year 1872,³ by a Portuguese boat to the coast of Africa, where it propagated, especially in the Congo, in an extraordinary manner. Ultimately in Abissinia there was observed, under the name of "moukardam," a parasite of the skin, which appears to be similar to the sarcopsylla penetrans. From Af-

¹ MONIEZ, R. *Traité de Parasitologie animal et végétal appliquée à la médecine*, J. B. Baillière et fils, Paris, 1896.

² Altri nomi sotto cui viene designata sono; Dermatophilus, Rynchopriion, Pulex penetrans; Puce chique (Francesi), Sandflea (Anglo-American), Sandfloh (Tedeschi), Chigger, Tunga (Indian).

³ NEVEU-LEMAIRE, M. *Précis de médecine—Parasitologie humaine*, De Rudéval, Paris.

rica, by means of the coolies, it was diffused in Oriental India and through the French soldiers, carried from Senegal in the expedition of 1898-99 to Madagascar. The male or the young female (figure 5, enlarged), is small, hardly a millimetre in length, the body flattened at the sides and of a red-brown color. In that state it lives like the common pulex irritans, but the female assumes a very diverse form and manner of life after impregnation. It penetrates into the human skin or that of domestic or wild animals, and sucks the blood from the papillæ of the cutis without producing pain.

Entering the cavity which it excavates, it is placed in such a manner that its head with the proboscis is fixed in the bottom. The posterior extremity is turned toward the outside and acts like a tampon at the small entrance hole. It changes in color becoming almost perfectly white, and if not disturbed by friction or compression follows regularly the period of ovulation by which the middle section of its body, the abdomen, swells enormously (figure 4) and becomes filled with an extraordinary number of eggs. These, when mature, are expelled and fall to the ground from which are hatched an equal number of larvæ, provided with thirty rings, which are surrounded by a cocoon,¹ from which in eight or ten days, the perfect insect emerges. The soil which it preferably inhabits is dry and sandy; but it is also found on dry vegetation and upon the branches of dead plants.

During the rainy season it has recourse to huts and houses, preferring quiet and abandoned places. The parts of the body which are attacked with greater frequency are naturally those which come in contact with the soil. It is particularly perilous to children who find amusement in rolling in the sand. It attaches itself with predilection to the soles of the feet, the spaces between the toes and under the nails, but other regions are far from being exempt; the scrotum, penis, contour of the anus, the face and the hands being likewise attacked (figure 6).

Many of these parasites may attack an individual at the same time; in some cases 300 being counted, so that one might say the patient was literally devoured. As the abdomen of the insect develops under the skin, the epidermis becomes swollen and the surface assumes an aspect as though covered with barnacles. It acts as a foreign body, irritating and inflaming the surrounding tissues, thereby causing the formation of pus. Adding to this the effect of

¹ MANSON, SIR P. *Tropical Diseases, Manual of Diseases of Warm Climates.* Cassel, London, 1905.

sucking it is easy to explain the sensation of annoyance, the pain, and the intolerable itching which reaches a point of cruel suffering, that some of our returning people claim to have endured. When ovulation is completed and the abdomen has assumed its greatest distension, the skin that covers it ulcerates, (figure 7) (Cayenne ulcer) and the animal is expelled with the products of the suppuration. There remains a wound with gangrenous margins, which, if infected with other pathogenic germs, especially tetanic, may expose the individual to grave consequences.

The best method for relief from this annoying tenant is its extraction before the ulcerating period arrives. Our emigrants have acquired, with practice, an extraordinary ability in this operation. With a needle it is necessary to raise the epidermis cautiously, taking hold of the abdomen of the worm and drawing carefully in order that the parasite may detach her beak of her own accord; otherwise the abdomen is lacerated, the eggs are dispersed in the crevice where the animal is lodged, and the legs and the head remain also.

In Cayenne they apply mercurial ointment and force it into the skin by making multiple punctures. This is then covered with a compress saturated with camphorated alcohol. The epidermis in this way softens and exfoliates, and the sarcopsylla is in a condition to be easily removed. The Indians spread on the skin pungent odorous substances, as tobacco juice, oil of carapa, etc.

Prophylaxis consists in keeping dwelling houses thoroughly clean, in sprinkling the floors with a solution of carbolic acid or other disinfectants or insect powder; bathing the feet every day; driving away parasites that may already be attached to the skin and following with applications of turpentine. One should never recline upon the ground. Garments of closely woven material and shoes of leather should be worn. These suggestions would be useful if the doctors on board ships bound for Brazil would impart them to the emigrants, whose health is likely to be impaired by the climate. I was the witness of so many diseases, so much misery and suffering from those returning from that region, that, if the conditions of the laboring people are not improved, I predict that not one of our peasants will be willing to go there.

NOTES ON CERTAIN DISEASES OF THE SKIN OBSERVED IN THE FAR EAST.*

By L. DUNCAN BULKLEY, A. M., M. D., New York.

Physician to the New York Skin and Cancer Hospital, Consulting Physician to the New York Hospital, etc.

DISEASES of the skin, as well as those of other portions of the body, are known to vary in relation, to race, climate, diet, and, among other conditions, perhaps even the soil has some influence in this direction. The marvelous preservation of the type of the Egyptian, for many thousands of years, is ascribed to the soil and influence of the Nile, in spite of repeated subjugation and immense admixture of various races, both from regions south of Egypt, and of Assyrians, Persians, Greeks, Romans, Arabs, etc.; and the continuation of the Jewish type, in every nation, is accounted for by racial peculiarities. Certain it is that the skin seems to be variously affected in different countries, which is only what might be expected, considering the ease with which its extended surface is subjected to many external influences existing here and there over the earth.

The first thing which struck me everywhere was what seemed to me the relative infrequency of diseases of the skin throughout the East. Although I visited very many hospitals and out-patient clinics in Japan, Korea, China, the Philippine Islands, Siam, Ceylon, India and Egypt, and made constant inquiry and search for them, and saw hundreds of patients, there were relatively few with dermatological troubles, except as will be mentioned later.

I also searched for them among some thousands of Chinese, Filipinos, and Siamese, in jails, with relatively little success: and yet one is constantly told that in all Eastern countries diseases of the skin are very prevalent. I can hardly explain this contradiction, except that as affections of this class are pretty troublesome and rebellious, and are relatively little known or studied by the general physician, such cases as do occur make more of an impression and give rise to the idea that diseases of the skin are espe-

* Read before the 33d Annual Meeting of the American Dermatological Association, Philadelphia, June 3-5, 1909.

cially frequent. There are, however, many cases of vegetable parasitic disease of the skin, seen everywhere, to which no attention seems to be paid.

1. LEPROSY. This is of course, prevalent in certain countries of the East, and some of it was seen in many places, although far fewer leprous beggars were seen than was expected; they are segregated somewhat in India. Very little attention seems to be paid to it by the physician or others, owing no doubt to the relative uselessness of treatment. The disease is not feared, and those with mild leprosy are in various occupations, and in one instance I learned that a gentleman's cook was a leper. In Manila I examined two hundred and thirty-six cases of leprosy in the San Lazero Hospital, but cannot present anything of very great interest in regard to them, except that for a year or two the X-rays had been used with some very remarkable results. There were twenty-two patients who had been thus treated, mainly of the tubercular variety of leprosy, and many of them showed the greatest diminution in the size and extent of the lesions; it was thought that there had been also material improvement in some macular cases. It was stated that in all the cases in the hospital the diagnosis had been verified by the microscope, the examinations being made in the large and excellently equipped laboratory established by our Government, and still carried on by the Philippine Government, at a cost of \$150,000 per year. Of the 236 cases in the San Lazero Hospital 140 were males, and 96 females; there were 16 boys and 8 girls, the youngest was a boy of twelve years. The tubercular form of leprosy predominated greatly, and there were many distressing cases of mutilation and blindness.

2. SYPHILIS. The belief is very common that syphilis is exceedingly prevalent in the East, and everywhere I was told that it was very common, and in some places that almost everyone was affected. And yet when I asked in each city to see the cases, and when I searched large numbers for evidence of present or past syphilitic lesions, I found very few instances of the disease; nor did I find much evidence of hereditary syphilis in the many children examined. I cannot, of course, deny that the malady is common throughout the East, for in the past I have seen many patients in New York who had acquired very severe syphilis in Eastern countries, and who have told me of its prevalence. But I can only record that personally on this trip I failed to discover the proof of its great frequency among natives, such as, for instance, is re-

ported in regard to certain parts of Russia, Portugal, and southern Europe, where we are told that a large share of the population has been infected, very often in an innocent manner, in family life. I saw, indeed, some cases of recent syphilis and some of the later manifestations of the disease; but in many alleged cases there was a mistaken diagnosis, which had been made largely on the statement of the patient that there had been previous infection. In a certain proportion of the cases called syphilis the trouble was probably frambœsia, which, as will be shortly mentioned, I am now convinced is quite distinct from syphilis.

3. FRAMBŒSIA, or Yaws. Through the kindness of Dr. Aldo Castelani, Director of the Clinic for Tropical Diseases, Colombo, Ceylon, I was able to observe and study nearly two dozen cases of this disease, in all forms, from the very beginning initial lesion, and, as stated above, I was convinced that it was another disease than syphilis. This study also helped me to understand other cases which I had seen elsewhere in the East, which, while simulating syphilis seemed to be different.

While I will not attempt any description of the disease, which has been so ably presented by Dr. Castellani,¹ and which appears to be so very prevalent in Ceylon, over thirty-five hundred cases being treated each year in the Government hospitals during the last few years; and I was told that almost all the children of the poor pass through the disease. I must acknowledge that when I read his articles and saw the pictures presented I was somewhat skeptical, and remarked to several friends that the pictures were certainly those of patients affected with syphilis, so closely do many of its lesions resemble those occurring in that disease. But that need not be wondered at, for how often does it occur with us that syphilis, the great imitator, resembles many other affections.

After studying the cases, however, and learning their history I was quite satisfied that we had to do with a different disease. As is well known, there is a spirochæta found in frambœsia, called by Castellani "spirochæta pertenuis," which differs from that found in syphilis; but my eye has not been educated sufficiently to recognize the difference.

The primary lesion of frambœsia, which I saw on the chin of a child, was interesting. There were two pultaceous sores, almost touching each other, irregularly roundish, the larger nearly an inch in diameter; there was no hardness, and no one familiar with the

¹ *Jour. Cutan. Dis.*, 1908, xxvi, pp. 151, 211.

appearance of extra-genital primary lesions of syphilis would seriously regard it as such. I also saw several cases in the earlier stages of the disease, with skin lesions very like those shown in Dr. Castellani's pictures.

There were also cases exhibiting later lesions, very suggestive of gummatæ of syphilis, but they become more fungoid, and the scars left, which I saw continually in Siam and elsewhere, are more irregular and less sharply defined than those in syphilis, although they are often very deep and show great previous destruction of tissue. It has been repeatedly shown that patients with active framboesia can acquire also syphilis. Mercury has relatively little beneficial effect in framboesia, except sometimes in children, and is often decidedly harmful, but iodide of potassium in comparatively large doses seems to control the disease.

Drs. Ashburn and Craig,¹ the United States Army Board for the study of Tropical Diseases as they occur in the Philippines, have made a very thorough study of the treponema (spirochæta) pertenuis (Castellani) of yaws, and the experimental production of the disease in monkeys; and they have published pictures corresponding to those of Castellani with microscopic illustrations of the parasite, and accounts of the experimental production of the disease in monkeys. Their conclusions are as follows:

1. That treponema pertenuis is the cause of yaws.
2. That treponema pertenuis is constantly present in the serum from yaws lesions.
3. That the variations in the morphology of treponema pertenuis are explainable by the deformities produced during the preparation of the serum for examination.
4. That treponema pertenuis and treponema (spirochæta) pallidum can be differentiated by the results obtained from the inoculation of monkeys.
5. That the inoculation of the serum from human yaws lesions containing treponema pertenuis causes yaws in monkeys, and that the organism can easily be demonstrated in the lesions of the affected animals.
6. That the length of the period of incubation in cynomolgus philippinensis Geoff. is approximately twenty days.
7. That the duration of the inoculated disease in this species of monkey varies from twenty-one to eighty-four days.
8. That yaws and syphilis are distinct diseases.

¹ *Philippine Jour. Sci.*, Oct., 1907, ii, No. 5, Sect. B. p. 441.

9. That treponema pertenue can be demonstrated in sections of yaws papillomata by the Levaditi method.

4. CANCER. During my entire trip I saw and heard very little of cancer, and found only one case of sarcoma, although I searched diligently for cases of malignant disease; cancer of the breast is occasionally met with in the East, but I was repeatedly told that cancer was very rare. The question arises whether this is not due to the largely vegetarian diet of the natives; this would be in accord with the claim recently put forth by several, and which I myself have long maintained, that a highly nitrogenized diet is one of the predisposing causes of cancer.

5. EPITHELIOMA. This also seems to be very infrequent in the East, for I did not see a single case, in spite of constant inquiry. Nor could I learn that the disease was ever seen among the natives, possibly from the reason just given.

6. LUPUS. Lupus vulgaris was occasionally met with, but in a number of cases this diagnosis was erroneously made; in two instances in one hospital a granulating eczematous surface about the ankle had been thus diagnosed, and the surface curetted. Tuberculosis cutis, with enlarged glands, was seen not infrequently, in several countries, tuberculosis of the lungs being very common and destructive throughout many portions of the East.

7. MYCETOMA. I was greatly disappointed at not being able to find in Madura, India, a number of cases of this affection, which is often known as Madura foot, for I only saw one. The surgeon at the General Hospital explained that he could show me some as pathological specimens, and that there were plenty of amputated stumps to be found in Madura, for the only treatment was the removal of the affected foot or leg. I saw some cases, however, elsewhere in the East, and some preserved specimens in museums.

Drs. Musgrave and Clegg,¹ in Manila, have made a very careful study of a case occurring in the Philippines, of which I saw the specimen, in which they isolated the parasite, streptothrix Freeri, and reproduced the disease by inoculation of the pure culture on the feet of monkeys.

8. TROPICAL ULCERS. The expression, "tropical ulcers," has often appeared in literature, and I was naturally desirous of seeing something which was so classed; but nowhere did I find ulcerative lesions which could not be more accurately defined and classified.

¹ Musgrave & Clegg. The Aetiology of Mycetoma. *Philippine Jour. Sci.*, Dec., 1907, ii, No. 6, Sect. B, p. 477.

Occasionally on the lower legs there were ulcerations due to traumatism and subsequent pus infection, but I saw nothing peculiar or distinctive, nor could I learn that any of the physicians used the term "tropical ulcers." I was not able to come across any instances of so called Delhi boil, Aleppo evil, Biskra bouton, etc., etc., and doubt the correctness or propriety of giving special names to cutaneous lesions which, by a more accurate diagnosis could all probably be assigned to diseases already recognized; it must be added, however, that owing to the great activity of many micro-organisms in hot climates, to be mentioned later, many skin lesions take on a somewhat different appearance there than with us.

9. ECZEMA. It was surprising how little eczema was met with or heard of, certainly not at all in the frequency and severity with which it is observed in the United States; the relatively few cases which I saw were mild and apparently yielded well to treatment.

10. PSORIASIS. This seems to be almost unknown in the warm climates of the East; I do not recall seeing or hearing of a case, although inquired for, nor to have seen it entered more than once or twice in the record books which I looked over. This may be also due to the absence of meat in the diet of the natives, as I have recently shown that a strongly nitrogenous diet is productive of the eruption.

11. ACNE. This seemed to be quite common among all the Eastern people, although I saw or heard nothing of it medically.

12. URTICARIA was sometimes recorded on the books, but I did not see or hear of a case, which, perhaps, is not surprising.

13. PEMPHIGUS. Neither this nor many other of the dermatoses common in our clinics was met with, indeed, other than has been or will be mentioned it was very difficult to discover very much of dermatological interest.

14. BERIBERI. I was, however, very greatly interested in the eruption occurring in beriberi, of which I discovered a very considerable number of instances in the Army Hospital in Manila, and also in that at Fort McKinley. The eruption is of a rather evanescent character, occurring early in the disease, so that it was not observed in a great proportion of the many cases seen. It consists of a mild congestion erythema, in small points or patches very like German measles; in one or two instances there was a decided purpuric character to many of the lesions, especially on the legs. The eruption generally gives little or no annoyance, though one of the

Army physicians said that he had had it severely, and there was some uncomfortable itching.

15. ANIMAL PARASITIC DISEASES. Although the East has an unsavory reputation in regard to animal parasites, we were singularly free from annoyance from them personally, and never were obliged to use the insect powder which we carried with us. Nor did I see or hear much of this class of skin trouble medically; I saw a few cases of scabies, though I was told it was common, and none of pediculosis; the loose clothing and free bathing habits in the East seem unfavorable to the latter.

The bathing propensities of the Japanese are well known, and in the warm countries which I visited the inhabitants were much in the water, and their half-naked bodies showed generally a smooth, soft, and rather oily skin, in both men and women, indicative of good health; but in Egypt, among the natives whom I saw in the hospitals there was such a dry, hard, and often scaly skin that one could readily expect it to take on disease.

16. VEGETABLE PARASITIC DISEASES. As in the tropics vegetative life is exuberant, and orchids and various parasitic growths are seen everywhere on the trees, so on man the vegetable parasitic diseases abound and flourish in a profusion which is remarkable.

First in Japan, and then more strikingly in China, I noticed on the semi-naked bodies, patches of discoloration, which at a distance I first mistook for leucoderma, so rounded were the whitish-yellow patches of all sizes, with apparent darkening around. In Siam I saw dozens, perhaps hundreds, thus affected among the sleek young Buddhist priests and others, before I had an opportunity of observing them closely and studying the surface with a lens, and examining scrapings from them with the microscope, at Nakawn on the Malay Peninsula; I then found that the light yellowish patches were very slightly scaly, and the scrapings more or less infiltrated with a vegetable parasite, which was not quite like any I was acquainted with.

In Colombo, Ceylon, Dr. Castellani was kind enough to enlighten me further with the microscope. The lesions in question were a tropical form of pityriasis versicolor, and one of his attendants had the disease very markedly, with whitish spots extending on the neck and face. He was requested to prepare specimens from the latter, and under the microscope there was a profuse mass of mycelium, with some spores, but not grouped as ordinarily seen

in pityriasis versicolor; he calls this variety *pityriasis versicolor flava*, as described in his recent article;¹ it is very rebellious and resistant to treatment.

TINEA IMBRICATA was occasionally met with, and answered very well to the description commonly given. There were many or few rounded patches, each of which exhibited several concentric rings, the edges of the scales being slightly elevated. They were of a dirty greyish color and not very adherent; when removed the surface beneath was a little reddened. Under the microscope the fungus, which is large and segmented, was not very abundant; it is regarded as a trichophyton. This is also pretty rebellious to treatment; Castellani² finds that it does best under either *linamentum iodi*, as advised by Manson, or resorcin dissolved in tincture of benzoin, sixty to eighty grains to the ounce, painted on once or twice daily, with occasional hot baths and scrubbings.

TINEA TONSURANS. This is tolerably frequent in the East, although I did not see many cases, and these did not seem to differ from those observed in this country. In Korea I saw many children with circular, more or less bald patches, which I thought at a distance was this disease; but I was surprised to learn that they were caused at various times by native doctors, who had applied a kind of moxa to the head, for the treatment of various internal disorders.

DHOBI ITCH. I did not see any cases of *tinea cruris*, which is known in the East by this name, but I heard of it as being common. It is usually ascribed to contagion through the dhobi, or native laundryman, and this is not surprising considering the way in which washing is done everywhere. The clothes are washed outdoors in pools and streams, often seemingly very filthy, and pounded on boards or stones, and the only wonder is that there is not more infection from them.

17. PINTA. On examining a large number of prisoners, in one of the jails in Siam, searching for matters of dermatological interest, I was struck with the number of instances of very white surfaces on the hands and feet of many of the men. On examining them closely there was simply a total absence of pigment, contrasting strangely with the quite dark skin of the subject; these were not the result of previous ulcerations, as there was no sign of cicatricial tissue. I was told by the physician in attendance that

¹ *Jour. Cutan. Dis.*, xxvi, No. 9, p. 393.

² *Jour. Trop. Med.*, Sept. 1, 1908.

this was called pinta. Sometimes both feet or hands were affected, sometimes only one. Generally the white areas were sharply defined, more commonly circular, and of various sizes, but often there were streaks and large areas; the men being practically naked no similar lesions were found except on the hands or feet.

According to writers pinta is an epiphytic disease due to an aspergillus, and there has been a preceding stage of parasitic invasion, which is followed by the leucoderma-like patches. But in none of these cases was there any evidence of such a stage, certainly not in a striking manner around the white patches, and the condition was probably one of long standing, the fungus having disappeared, leaving only the decolorization. Among these prisoners there were more instances of the trouble on the feet than on the hands; as no shoes are worn it is understandable how even more liable the feet are to parasitic invasion than the hands.

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DISCUSSION

DR. M. B. HARTZELL said the scarcity of psoriasis in warm climates, which Dr. Bulkley was inclined to attribute to the absence of meat diet, might be due to the influence of the sun's rays. We knew that patients with psoriasis were apt to improve in summer, especially in those who wore very light clothing.

DR. GEORGE PERNET, speaking of the bouton de Biskra, said that during a visit to Biskra he saw a number of these cases among the French soldiers, and he also recalled seeing a boy with five of the lesions on the face.* This disease was *sui generis*. In Algeria they called it the "one year disease," because it took that length of time, more or less, to get rid of it. Under proper treatment, the lesions could be cured in less time than that.

DR. THOMAS C. GILCHRIST said that in yaws a spirochæta had been found and could be easily demonstrated by the dark-field illumination method. In unskilled hands, this apparatus would be apt to do a lot of harm because of the very ease with which the organisms could be demonstrated. For instance, a number of different spirochætae were now recognized, including the spirochæta dentium and refringens, and these might very easily be mistaken for the spirochæta pallida, and thus lead to serious mistakes in diagnosis.

* PERNET: *The Differential Diagnosis of Syphilitic and Non-Syphilitic Affections of the Skin, Including Tropical Diseases.* 1904. pp. 37-38.

A CASE OF PELLAGRA IN MASSACHUSETTS.

BY CLARA P. FITZGERALD, M. D. Worcester, Mass.

IN view of the interest recently aroused in the comparatively rare disease, pellagra, the following report is perhaps of some importance:

On July 11, 1909, there came to my special department in skin diseases at St. Vincent's Hospital, a very puzzling case. At first, I suspected syphilis, but in a few days after careful study, pronounced the disease pellagra. I found the literature on the subject rather meagre, but later reports on the disease by Doctor Wood and Doctor Thayer, respectively, helped to confirm the diagnosis I had rather hesitatingly made. The patient was sent to Worcester from Winchendon, Massachusetts, by the Board of Health of that town, it being supposed that she was suffering from tuberculous enteritis and eczema. The case was then referred to me. The patient gave the following history:

Mrs. L., born in New York, of an American mother and a French Canadian father, thirty-two years ago. At the age of twelve she moved to Winchendon, Massachusetts, where she has resided ever since. She rarely left home and never visited outside of New England. At seventeen she married, and her husband and five children are living and well; the oldest child, fourteen, the youngest, six years of age. Seven years ago she was delivered of a dead seven month's foetus, and again two years ago. She has not been pregnant since the last miscarriage. Her father and mother, three brothers and two sisters are living and well. Two married sisters died of tuberculosis. When a child, Mrs. L. had diphtheria and pneumonia, but no other disease that she remembered and she was always considered healthy. Her menstruation has always been regular, but very painful for two days during each period. She flowed freely, as a rule, five or six days. For the past seven years she has complained of being tired all the time, very nervous and fretful, but did her own housework. During the past winter she was admitted to the State Sanitorium for Consumptives, at Rutland, where she remained for about six weeks. Her general condition improved while there, so that she was able to do her own housework. She never had a cough, but her symptoms resembled incipient phthisis.

About the first of April she menstruated as usual, but the flow continued more or less during the month and had not ceased at the time of examination. She seemed to have had no definite symptoms until April when her mouth became full of "canker sores," and her tongue swelled so that she ate and talked with difficulty, and she expectorated all the time. Simultaneously ulcers appeared on her genitals. She had a persistent diarrhoea, sometimes twenty movements during the night and morning, and some days only about five. She never noticed any blood or mucus in the stools, but they were black and foul smelling.

Since her admission to the hospital she has had slight pain in the abdomen, and a sharp pain in the pelvis. For about five weeks before she came to Worcester, she was so weak she was obliged to stay in bed; she did not have headache or sore throat, and her appetite was good; she did not feel feverish. Soon after her mouth became sore, papules, covered with soft crusts, appeared on her forehead and cheeks to her chin. Her face was swollen and her eyes closed for three days. She had anaesthesia of the nose. The scabs dried and left dark red, mottled patches containing small depressions. After a while her forearms became affected, and an eruption extending from the elbows and over the forearms and backs of the hands, developed. At first it was not painful and never itchy. It was supposed to be eczema and she was forbidden to use water on her skin. Grayish-black, scaly patches appeared later over the knees and finally the eruption appeared on her feet.

EXAMINATION. I saw the patient shortly after her admission to the hospital. She was in bed and seemed nervous and had a very anxious expression. She talked intelligently and gave a graphic description of her condition. Her skin was very dark, her hair black and decidedly lusterless and a dry seborrhœa was conspicuous on the scalp. Extending over the "rosacea region," from the lower half of the forehead to the chin and over the malar bones, on the cheeks, excluding the space between the eyebrows and the bridge of the nose, was an oval, peculiar, erythematous patch, slightly scaly and deeply pigmented. The color was a dusky red, with pigmented dots over the surface, while the periphery was purpuric. A lesion about the size of a five-cent-piece, slightly raised and sharply outlined, of a brown shade, was situated under the right ear. Over the clavicles there was a slight exfoliating light brown epidermis.

The lips were swollen, dark brown, cracked and bleeding, with

one or two small blebs on the under lip, and surrounding the lips was a scaly erythematous border. She continually expectorated large amounts of thick mucus. Under the tongue and extending back as far as one could see, the mucous membrane was fiery red and covered with numerous aphthous ulcers. Long stringy pieces of epithelium were detached with difficulty, leaving the mucous membrane raw and bleeding. The tongue was swollen and deeply furrowed; the teeth discolored and dirty; the gums spongy. The body showed lack of cleanliness. Between the scapulae there was a neglected, discharging nodule, with a brown areola, resembling a furuncle, but painless. The contents were fibrous and dark green in color. Several others of like nature appeared later in the neighborhood. No other lesions were on the trunk. The body was very thin, but not emaciated. About the vulva and anus were several aphthous ulcers, but I did not make a vaginal examination on account of the bloody discharge. The lesions on the arms were especially striking, and were precisely alike in their distribution, direction and position, as shown in figure 1. A sharp crescentic line of demarcation, almost black, extended above the elbows posteriorly and down the forearms anteriorly, distinguishing clearly the well from the diseased portion. The forearms and dorsa of the hands were covered with a desquamating epidermis, very dark in color, and over the wrist and on the dorsa of the hands were several blebs, and in places raw bleeding ulcers. The arms and hands were very painful. At first the palms were not affected. The condition resembled a burn somewhat. The nails appeared translucent, and the matrix very prominent.

On each knee there was a large, dark, scaly patch, with an erythematous border showing well in figure 2. The toes were covered with a dry scaly epidermis, and almost corresponding to the shape of the top of a lady's very low cut slipper. There were deep red erythematous bands encircling the feet. The patient's appetite was variable. Physical examination of the lungs and heart was negative. Urinalysis, negative, except that the urine was muddy and the odor foul. Reflexes and sensibilities, normal. Temperature, 100° . Pulse 110. Respiration 30.

The patient was placed in a bed under a canopy on an open upper verandah, and remained out of doors under the care of a special nurse. Treatment was symptomatic and highly unsatisfactory. Boric acid and vaginal douches and rectal enemas, high saline irrigations, etc., and bismuth internally did not control the discharges,



FIG. 1.



FIG. 2.

but the odors were less offensive. The stomatitis progressed and dysentery was variable during the first two weeks. Anorexia was marked and she was fed with very small quantities of concentrated liquid foods. Tonics of iron and arsenic were not well borne, and small doses of thyroid extract were tried but without results.

During the second week bright red crescentic shaped patches appeared under the eyelids and at the outer canthi, and similar lesions appeared on the forehead, cheeks, neck and ears, all absolutely symmetrical. Later these patches became pigmented and finally exfoliated, leaving the parts slightly raised, dry and dark red.

The epidermis on the forearms, palms and dorsa of the hands and between the fingers became raised in the form of bullæ and gradually detached, exposing a raw bleeding surface with numerous blebs. The fingers were very stiff and extremely painful. Wet dressings of boric acid and glycerine afforded some relief. The nails loosened but were not cast off. When the skin healed it resembled the scar of a recent burn and was very soft to the touch, although it looked rough in places. About the knees the erythema extended noticeably, the parts became hot and tender and a ribbon-like bleb, about one-half inch wide, formed, encircling the scaly patches. With the development and extension of these lesions there was an exacerbation of the general symptoms which subsided when the blebs began to dry up.

The patient's temperature was generally sub-normal. About the third week she complained of burning in the stomach, nausea, anorexia, numbness of the limbs, cold feet, great thirst, and she was profoundly exhausted. Her tongue became shrunken, dry and coated along the margin. Salivation ceased entirely. Numerous purpuric spots appeared over her face and chest; her body gradually emaciated, and in spite of excellent care a large bed-sore developed over the sacral region.

Her mind, though clear up to the last days, became confused, and at times she was delirious, but this was only what might be expected with such intense toxæmia. She died August 15, 1909.

EXAMINATION OF BLOOD. Differential count: Polynuclears, 83%; mast cells, 2%; lymphocytes, 15%; white count, 11,066; red count, 5,304,000, haemoglobin, 60%. Red cells: No poikilocytosis; no erythroblasts; no variation in size; no crenation. Examination of faeces, negative.

The autopsy revealed nothing striking with the exception of

the stomach, which was half the normal size, containing 750 cc. There was a dermoid cyst of the left ovary. The intestines were markedly haemorrhagic and spotted with purpuric lesions resembling those on the skin and covering the mucosa of the ascending colon and cæcum, and scattered through the large intestines and on the omentum, were granular infiltrations of a tuberculous type. The lungs, heart, kidneys, and liver were normal. There was an old pleuritic adhesion of the left lung. The spleen was enlarged by one half. The brain was not removed. The spinal cord showed no special lesions. A section of the skin was taken, but no report has been received.

The photographs were taken the first of August, 1909, and give a fair idea of the location and symmetry of the lesions.

This case seems to be unique. The locality would not suggest pellagra but the symptoms left no doubt as to the diagnosis and further, the patient was examined by two physicians who had seen several cases. She had never eaten corn in any form, neither corn bread, corn meal nor green or canned corn, nor had she ever eaten maize. She was, however, very fond of fish, and as she lived in a poor locality, the quality of the food might be questionable. There was no history of alcoholism.

The presence of tubercles in the omentum, disclosed at autopsy, suggests the query as to a possible relationship between tuberculosis and pellagra, in this patient. To be sure, the association may have been coincidental, but the absence of the usual dietetic factor warrants a search for the cause in this direction.

137 Pleasant St.

REVIEW
of
DERMATOLOGY AND SYPHILIS
Under the charge of **GEORGE M. MACKEE, M. D.**

SERUM DIAGNOSIS.

By **HOMER F. SWIFT, M. D.**

A Rational and Simple System of Sero-Diagnosis of Syphilis. H. NOGUCHI, *Jour. Am. Med. Assn.*, 1909, liii, p. 1532.

For a rationally constructed fixation test, Noguchi claims that the quantity of each reagent should be known and definite. He shows how complete haemolysis of a unit of cells can be produced by altering the quantity of haemolysin and complement inversely to one another. Some samples of human sera are very rich in haemolysin to sheep cells, hence a partial complement fixation is marked with such sera. By using human cells as indicator this element of error is eliminated. An extract of organs used as complement contains two factors, one antigenic, the other anti-complementary. The latter may be removed by fractionating the alcoholic extract with acetone. Heating a syphilitic serum to 56° C. for thirty minutes reduces the antibody content to twenty or twenty-five per cent. of that originally present in the fresh state, hence four or five times as much inactive serum should be used if that is employed instead of active serum. All the various modifications of the Wassermann reaction except that of Noguchi are shown to be inaccurate because the quantity of the various reagents cannot be accurately determined.

The Sero-Diagnosis of Syphilis. H. NOGUCHI, *Jour. Am. Med. Assn.*, 1909, liii, p. 934.

In this paper Noguchi presents the results of the analyses of 2406 specimens of blood serum by the complement fixation test, using either his or the Wassermann methods. The reports are in the form of tables in which the results in the different stages of syphilis are given. A table of eye cases shows the value of the reaction to the ophthalmologist. A large list of controls is presented in which leprosy is shown to give a positive reaction seven times out of ten trials. Finally there is a table of 244 cases of syphilis in which the Wassermann and Noguchi methods are compared; 183 were positive with the former and 211 with the latter method. Noguchi attributes this superiority in his method to the elimination in the error introduced by the presence of too great an amount of haemolysin, and not to an over-sensitiveness as is claimed by some workers.

Some Studies of the Precipitin Tests for Syphilis. H. S. WIEDER and
E. M. L'ENGLE, *Jour. Am. Med. Assn.*, 1909, liii, p. 1535.

In applying the precipitin tests to sera from syphilitic and non-syphilitic patients, the authors used as reagents sodium taurocholate and glycocholate, lecithin, taurin and water. With the first two reagents the parasyphilitics showed the highest per cent. of positive reactions, non-syphilitics the next, tertiary and secondary syphilis the fewest. Slightly better results were obtained with lecithin and taurin. As a result of the studies, the authors conclude that none of these tests give the practitioner a short road to diagnosis because the proportion of positive reactions in non-syphilitics is too high to make the tests of value.

The Complement Fixation Reaction in Scarlet Fever. V. HECHT, M. LATEINER and M. WILENKO. *Wien. klin. Wchnschr.*, 1909, xxii, p. 523.

Observations were made on one hundred and six specimens of serum from scarlet fever cases; of these ninety-six were from living patients, and ten obtained post-mortem. Two antigens were used; one, an alcoholic extract of guinea pig heart, the other an alcoholic extract of the liver from a fatal case of scarlet fever. This had been proven a good antigen for the Wassermann reaction by comparison with a luetic liver extract. In the test 0.1 cc. of suspected serum was employed. One of the patients who had a marked nephritis gave a positive reaction on the twelfth day of the disease. This reaction was obtained with the guinea pig heart extract, but not with the scarlet fever liver extract. Specimens of blood from two autopsies gave a strong reaction with both antigens. In both of these cases a marked nephritis was present, so that all three positive reactions, out of 119 tests, were obtained in patients who had nephritis. The authors conclude that the occasional complement binding in scarlet fever has little effect on the value of the Wassermann reaction; and also that the scarlet fever extract contained no specific scarlet fever antigen.

The Wassermann Reaction in Scarlet Fever. R. FU^A and H. KOCH,
Wien. klin. Wchnschr., 1909, xxii, p. 522.

Before presenting their own results with scarlet fever serum, the authors give a tabulated report of similar work by ten other experimenters. Among these all kinds of extracts were used as antigen, and in some instances as much as 0.5 cc. of suspected serum were used. Of the three hundred and fifty-three cases summarized, twelve per cent. were positive. In the present series an alcoholic extract of guinea pig heart was used as antigen, and 0.2 cc. of human serum was employed. In fifty-nine cases studied, there was some delay in haemolysis fourteen times and only once some inhibition after four hours, so the authors conclude they have never seen a marked positive reaction in scarlet fever.

BOOK REVIEW

A Practical Treatise on Diseases of the Skin. For the Use of Students and Practitioners. By J. NEVINS HYDE, A.M., M.D., Professor of Dermatology and Venereal Diseases in the University of Chicago, Medical Department (Rush Medical College). New (8th) edition, thoroughly revised and much enlarged. In one very handsome octavo volume of about 1137 pages, with 223 engravings and 58 full-page plates, in colors and monochrome. Cloth, \$5.00 net; leather, \$6.00 net. Lea & Febiger, Philadelphia and New York, 1909.

We welcome the appearance of the eighth edition of this standard work. Since it first saw the light in 1883, as a modest, but lusty, infant of 572 pages, we have learned to expect a new edition about every four or five years. As each edition has been kept fully abreast of the times, looking over the eight volumes, shows us how greatly our specialty has advanced, and the wonderful progress in the art of book making. The first edition was almost without illustrations, and those were wood-cuts, while this one has 225 half-tones and 58 full page plates in colors and monochrome.

Each edition is a new book, printed from new type, the matter thoroughly revised, and the subjects presented in a more and more practical and attractive manner. The author's sound conservatism, knowledge of the literature, and vast experience as a clinician and a teacher speaks forth from every page, and makes the book second to none, a safe and sane guide in dermatological matters.

There are nearly 200 pages, 116 half-tones, and 24 plates more in this edition than there were in the previous one, and new articles on prurigo nodularis, paraffine prosthesis, osteoma and calcification of the skin, meralgia paræsthetica, acrodermatitis pustulosa hiemalis, lichen spinulosus, exfoliativa congenita, lipoma, Fordyce's disease, causalgia, leukæmia and pseudo-leukæmia cutis, tinea ciliorum, and brown tail moth dermatitis. So long a list of new diseases in so few years! And yet the general practitioner professes to think that there is not much in dermatology!

The new tuberculin tests, the opsonic method, Bier's method, congelation by liquid air and carbonic acid snow, and some of the new drugs are noticed. The use of vaccines is not mentioned in the treatment of furunculosis, and is regarded as of little value in the therapeutics of acne.

The chapters have been rearranged, and new divisions have been made of diseases of warm and hot climates—affections of the nails, and diseases of the mucous membrane in association with dermatoses. While these new divisions are convenient and practical, they badly upset the orderly arrangement of classification.

We sincerely trust that, backed by the authority of this book, advance may be made in simplifying our nomenclature, at least so far as concerns that disease variously called erythema elevatum diutinum, erythema scleroticum, pemphigoid sclerotic erythema, chronic erythema multiforme, ringed eruption, lichen annularis, and sarcoid tumors, for which our author would substitute granuloma annulare. He also prefers Brocq's term parapsoriasis for the disease variously named parakeratosis variegata, dermatitis psoriasiformis nodularis, and erythrodermie pityriasisque en plaques disseminées. Not that we are specially partial to granuloma annulare or parapsoriasis as titles, but because we long so ardently

for simplicity and unanimity in nomenclature that we rejoice in all such efforts as made by the author of this volume.

We miss from the title page of the book the name of F. H. Montgomery, Dr. Hyde's able, painstaking and conscientious co-worker on the 5th, 6th and 7th editions, and are saddened by its absence. His sudden death was and is a loss to our specialty. He was a careful observer, a reliable scientific worker, and an upright, honest man. To have revised the book so thoroughly without his aid, and in the rush of a large practice, speaks volumes for the energy of our author.

The general make-up of the book is of that high degree of excellence we have learned to expect from the publishers.

No one who is engaged in special dermatological or in general practice can afford to be without this book.

G. T. J.

NOTICES.

EXHIBITION OF HYGIENE AT BUENOS AIRES.

An exhibition of hygiene, under the direction of the International American Congress of Medicine and Hygiene, will be held at Buenos Aires beginning on May 25, 1910. The meeting, which will also be a national celebration, is in commemoration of the first centenary of the revolution which made the nation a republic. The programme includes the erection of many beautiful buildings in which to exhibit the various scientific and historical contributions. The Congress promises to be exceedingly interesting and instructive. For information apply to the Secretary of the Medical Faculty, Buenos Aires, Argentine Republic, or to the Consul General of the Argentine Republic, J. V. Fernandez, 80 Wall Street, New York.

CONFERENCE ON PELLAGRA.*

Held under the auspices of the South Carolina State Board of Health
at the State Hospital for the Insane, Columbia, S. C.,
November, 3-4, 1909.

The first paper was read by DR. F. M. SANDWITH on pellagra from an English viewpoint. He had studied the disease in England, South Africa, Italy and Egypt. In the latter country he had estimated that the disease varied from 15 per cent. in well-to-do districts, to 62 per cent. in the poorest hamlets. He was of the opinion that both sexes suffered equally and that children under ten years of age were frequently affected.

The speaker said that there were districts where maize had been cultivated for many years but the disease had not appeared. It was the poorer class of people, who lived largely on corn, who developed the disease. Finally, the disease required, for its development, the habitual consumption of damaged maize. He stated that the Italian writers were of the opinion that the bread mould was the cause of the disease. Dr. Sandwith thought that all cases of pellagra should be reported so as to establish reliable statistics.

DR. J. W. KERR discussed the question of pellagra as a national health problem. He stated that the disease was serious and its appearance in the United States was a matter of grave concern. He likened the disease to beriberi in that they were both alleged to be caused by the consumption of important articles of diet. Dr. Kerr estimated that

* Abstracted from the *Jour. Amer. Med. Assn.*, 1909, liii, No. 20, p. 1659.

there were, up to November, 1, 1909, 5,000 cases of pellagra scattered over thirteen states. He did not think that maize should be excluded as an article of diet, excepting for experimental and medical purposes, until the subject had been thoroughly investigated.

DR. E. J. WATSON, who discussed the economic phase of the subject, thought that the people of South Carolina should raise and prepare their own maize.

DR. G. A. ZELLER considered the question of pellagra in Illinois. Up to November, 1909, there had been 130 cases of the disease in the Peoria State Hospital, with 100 additional cases in which it was impossible to establish a diagnosis. Of the 130 cases, 75 were women and 55 were men. Of these, 45 had died. Of the living, the average age was 51; average number of years insane, 16; average number of years resident in the hospital, three and one-half. Of the dead, the average age, at death, was 54; average length of time insane, 17 years; average length of time in the institution was four years. The total death rate was 34 per cent. The youngest pellagrin was 22 years of age; the oldest, 85.

DR. J. F. SILER spoke on the clinical aspect of the subject. He had found that eye symptoms occurred in a large percentage of the cases; about a third of the patients suffered from dysentery; they all presented cutaneous lesions involving the backs of the hands, and in many cases this was the only cutaneous symptom noted. Bleb formation occurred in a few cases. Symptoms involving the gastro-intestinal tract usually characterized a severe type. The plantar and patellar reflexes generally showed a departure from the normal. Many of the cases were insane. Treatment had been very discouraging. He had had no good results from the use of saline solutions, atoxyl, arsenic, mercury or thyroid extract. Milk fermented with the bacillus Bulgaricus gave good results in a number of cases. It had been given in the hope of modifying the contents of the intestines.

DR. H. J. NICHOLS discussed the ætiology of pellagra. Investigations had excluded good corn as a causative factor. Considerable work had been done on "spoiled corn." No fungus growth had been found that would survive cooking. A spore-bearing bacterium had, however, been demonstrated, that could resist steaming for two hours. The most promising field for investigation, the speaker said, was along the line of an intoxication from the toxic products of improperly handled corn, acting in a damaged intestine. The recent trouble with corn was possibly due to the fact that shelled corn was not allowed to be thoroughly "weathered."

DR. ISADORE DYER argued for a more satisfactory definition of the symptomatology in the skin lesions of pellagra. Five cases were related in detail, no two of which presented the same symptoms, and none of them having the erythema considered so characteristic of the disease. Differential points were raised showing resemblances to blastomycosis,

vesicular eczema and pityriasis rubra pilaris. The writer related one apparent cure by the use of hydrobromate of quinine.

DR. C. G. MANNING described a disease which is prevalent in Barbados and which was called psilosis pigmentosa. It was quite similar to pellagra in its clinical manifestations, but he did not think that the two diseases were really the same. He was quite certain that psilosis pigmentosa was not caused by damaged corn.

DR. H. F. HARRIS discussed the pathology of the disease. As a result of his observations he thought that the initial changes were in the central nervous system. He had noted, besides the cutaneous symptoms, atrophy of the stomach, congestion of the intestines with ulcer formation, enlargement of the mesenteric glands, and a reduction in the size of the spleen, liver and kidneys. In one instance he encountered a typical meningomyelitis acuta.

DR. C. H. LAVENDER reviewed the blood findings in pellagra. He usually found a mild secondary anaemia, that leucocytosis was rare, and that the differential count showed nothing of importance. He had been unable to isolate any organism from the blood.

DR. A. MARIE presented a long and interesting discourse on pellagrous insanity in the Arabs in Egypt. The mental state of the patient was usually characterized by irritability and apathy, mental and physical depression and divers phobias. General paralysis of the insane was also frequently noted in pellagrins.

DR. JOHN WARNOCK spoke upon the subject of pellagra in Egypt. He had found the disease quite common in children. It was a common sight to see children, of from ten to fifteen years of age, who were dwarfed, cachetic, anaemic, presenting cutaneous symptoms and, not infrequently, insanity. In the asylum, at Cairo, no corn in any form was used as food and yet pellagrous patients, who had been there for years, would develop acute exacerbations, sometimes with death.

DR. C. C. BASS reported 16 cases of pellagra in which he had employed the Wassermann test with lecithin as antigen. Four cases, all positive, were ruled out because of syphilis, malaria or autopsy blood. Eight of the remaining 12 gave positive reactions, while 4 were negative. The four negative cases were of the severe type, while 7 of the positive cases were mild or chronic in character.

DR. HOWARD FOX reported 30 cases of the disease tested with the Noguchi modification of the Wassermann test. The cases examined included 8 white and 20 colored women, 1 white man and 1 colored boy. All the patients except one were from South Carolina. None of the patients presented signs of syphilis although, of course, this disease could not be excluded. Two different antigens were employed in testing every case. One consisted of an extract of syphilitic liver and the other was a composite extract of syphilitic liver and of normal hearts and kidneys. In performing the tests, a known negative serum and one or

more known positive sera were used for comparison. The entire series of 30 cases was tested 4 times. With one exception no well-marked positive reactions were obtained. In this case it was afterward ascertained that a previous syphilitic infection was probable. In 2 other cases there was a positive reaction of moderate intensity and in 5 it was weakly positive. As a result of his observations the speaker felt quite certain that the findings in pellagra would not affect the value of the Wassermann test in syphilis.

DRS. H. P. COLE and G. J. WINTHROP read a joint paper on transfusion in pellagra, in which they claimed to have obtained good results in several severe and apparently hopeless cases.

DR. H. E. McCONNELL, basing his opinion on the study of twenty-four cases, over a period of several years, thought that the cause of the disease rested in the harvesting of unmatured corn and its faulty handling during transportation. This allowed fermentation to take place with the formation of toxic substances which produced the disease. The speaker thought that the port of entry was the stomach, because all his patients had presented gastro-intestinal manifestations before showing nervous symptoms. He did believe, however, that most of the symptoms of pellagra were caused by the action of the toxins on the nervous system. Another point in the speaker's experience was that pellagrous patients, who were improving, would develop a relapse if again allowed to eat corn.

DR. J. J. WATSON read a very complete and interesting paper on the symptoms of pellagra. He had found the premonitory symptoms to consist of gastro-intestinal disturbances and psychic depression. The skin symptoms were next in order and consisted in the characteristic erythema of the hands and arms not covered by the clothing. This was followed by a peculiar chocolate pigmentation, which would disappear after a time. Individuals would have several attacks of erythema each year. The eruption often attacked the face and the parts of the body which were subject to pressure. Eye symptoms were common and various grades of insanity were sure to develop during some stage of the disease.

DR. H. H. GRIFFIN considered the question of the communicability and hereditary influences of the disease. He did not consider it to be communicable, but thought that susceptibility was inherited.

OTHER PAPERS READ:

"Pellagra in Yucatan," DR. G. F. GAUMER; "Pellagra in Jamaica," DR. D. J. WILLIAMS; "Personal Experience with Damaged Corn," MR. J. S. WHALEY; "A Theory as to the Cause of Pellagra," DR. C. S. PIXLEY; "Report of a Case of Pellagra Universalis," DR. J. R. MILLER;

"Report of a Sporadic Case of Pellagra," DR. J. LUNNEY; "Report of Six Cases of Pellagra," DR. T. MADDOX; "Pellagra in Children," DR. M. B. YOUNG; "Infants of Pellagrous Parents," DR. D. S. POPE; "Diseases of the Eye in Pellagra," DR. A. B. CLARK; "Eye Symptoms of Pellagra," DR. E. M. WHALEY; "Prognosis of Pellagra," DR. J. H. RANDOLPH and DR. R. N. GREENE; "Pellagra in the East Mississippi Insane Hospital," DR. J. M. BUCHANAN; "Personal Observations on Pellagra," DR. T. L. W. BAILEY; "Results of Stomach Analyses in Pellagra," DR. W. O. NESBIT; "Amœbæ in the Stools of Pellagrins," DR. W. ALLEN; "Pellagra at Nashville, Tenn.," DR. J. M. KING; "Ætiology of Pellagra," DR. J. H. TAYLOR; "Gynaecologic, Obstetric and Surgical Aspects of Pellagra," DR. E. B. SAUNDERS; "Pellagra, Its Relation to Insanity and Certain Nervous Diseases," DR. J. W. MOBLEY.

MEMORIAL TO DR. ERNEST BESNIER, FROM THE NEW YORK DERMATOLOGICAL SOCIETY

With the close of the last society year came news of Dr. Besnier's death, which occurred in Paris, May 15, 1909.

By the members of this Society, of which he was an honorary member, as well as by the entire dermatological world, it was at once realized that this special department of medicine had met with an irreparable loss.

Almost up to the time of his death, at the advanced age of seventy-eight years, Besnier's influence in dermatology was distinctly manifest. He first became identified with this specialty in 1873, when he succeeded Bazin at the Hôpital Saint Louis. His election to the French Academy of Medicine, eight years later, however, was in recognition of his eminence as a practitioner and a hygienist.

His ten years of general practice, during which he did notable work in epidemiology, and contributed classic articles on gall-stones, pathology of the spleen and on rheumatism, gave him that broadness of view and thought so essential to success as a specialist.

What Besnier has done for dermatology is well known. To his valuable support and untiring energy is due, in no small measure, the life and growth of the *Annales de dermatologie et de syphiligraphie*. In collaboration with Doyon his annotations to the French translation of Kaposi's text-book in 1881, will ever live as a testimonial to his greatness.

In all his writings, but particularly those on prurigo, pityriasis rubra pilaris, lupus, the colloid degeneration of the skin and eczema, in *La Pratique Dermatologique*, his keenness of observation, originality

and independence of thought, clear enunciation of facts, and precise diction, are everywhere evident.

Besnier advanced the cause of dermatology, not alone by his scientific contributions, but he was, as well, a teacher of rare ability. He was always active in the French Dermatological Society, upon which he shed great lustre, and was its President in 1889. At the International Dermatological Congresses, he was ever a power, and was the President of the 1900 Congress held in Paris.

We revere and honor the memory of Ernest Besnier, both for what he was, and for what he did. His name will find a place among those truly great men, who have so signally advanced the science of dermatology.

H. H. WHITEHOUSE,
G. H. Fox,
A. R. ROBINSON.

MEMORIAL TO DR. HENRY RADCLIFFE-CROCKER, FROM THE NEW YORK
DERMATOLOGICAL SOCIETY.

Dr. Henry Radcliffe-Crocker died in Switzerland on August 22, 1909.

The New York Dermatological Society, of which he was an Honorary Member, takes this opportunity of expressing its deep sorrow at the loss of this distinguished colleague.

As one of the foremost dermatologists of his day, as a highly successful teacher and as an admirable author he was recognized by the medical profession throughout the world. But the rare qualities of mind and heart which entered into his genial personality were known and appreciated only by those who had the good fortune to enjoy his friendship.

H. H. WHITEHOUSE,
G. H. Fox,
A. R. ROBINSON.

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THE LICHEN GROUP OF SKIN DISEASES: A HISTOLOGICAL STUDY.

By J. A. FORDYCE, M. D.,

Professor of Dermatology and Syphilology, University and Bellevue Hospital Medical College, New York.

THE histology of many skin diseases is so indefinite that the diagnosis can be made with difficulty, if at all, from the histological findings alone. While in a certain number we have a picture which it is possible to associate with the clinical appearance, there are not many cutaneous affections that present the constancy and definiteness that lichen planus does under the microscope. Considering the clinical polymorphism of the disease, this uniformity in its histology is all the more surprising when we contrast it with other types of cutaneous eruption, as syphilis, for instance, where the histological structure is as multiform as its clinical manifestations.

In a series of sections of lichen planus which I have studied, the evolution of the disease may be seen from the minutest pin-head sized lesions to those showing considerable hypertrophy of all the layers of the skin. In all the changes observed are practically identical, the existing differences being those of degree with exaggeration of one or all the factors concerned, or due to anatomical localization of the papule.

The beginning of the process in all types probably takes place in the papillary bodies, the intensity determining whether the vessels of the subpapillary layer are implicated simultaneously or later. The localization of the process to this portion of the corium is still no nearer solution, and I confess, after my studies of many phases of the disease, to being unable to contribute to its elucidation. To what extent the nerve supply or the vessels are responsible the microscope offers no assistance, and we are still permitted only to theorize. It has occurred to me that perhaps the epidermis contains a sub-

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stance exerting a chemiotactic influence on this region of the cutis. The papillæ being richer in blood vessels and cells than other parts of the derma, it is not unnatural that they should bear the brunt of the reaction.

The earliest change, then, is a dilatation of the vessels and lymph spaces of the papillæ. With this increased nutrition the connective tissue cells proliferate and the papillæ become swollen and more rounded. Simultaneously, or closely following the above, the subpapillary layer becomes involved in the same manner and a round-celled infiltration makes its appearance. The lymph spaces are enormously dilated, the tissue becomes oedematous and an intra- and intercellular oedema now makes its appearance in the epidermis. This is probably the first change in the epidermis, although some investigators consider the migration of leucocytes to precede it. As the lesion grows older and the subepidermic infiltration and oedema increase, the rete pegs flatten, the basal layer becomes disorganized and obscured by the infiltration, which is especially dense at the dermo-epidermic margin (Fig. 1). The middle layers of the rete flatten, the cells assume more of a spindle shape and the granular and horny layers hypertrophy. The latter increases in thickness especially in its lowermost portion over the central part of the papule where it sinks in at the expense of the rete and forms a small horny plug. A colloid degeneration affects the epithelial cells and the staining capacity of both nucleus and protoplasm is lessened. There is now a dense cellular infiltration limited to the affected papillary and subpapillary layers with a few migrated cells in the epidermis and about some of the outlying vessels. The cells represent practically only two varieties, the connective tissue cell with a clear nucleus and the lymphocyte. The lack of unanimity on this point may have its explanation in the lesions being examined at different periods of their evolution, the first changes having been obscured by the density of the infiltration or after secondary factors, as scratching, had become operative in producing additional elements. On the other hand, some of the lesions of lichen planus, we know from our clinical experience, are so evanescent and have such a short period of evolution, that a variance in the minor details of their histology is a matter of no great surprise. I have found in some sections plasma and mast cells, as well as polynuclear leucocytes, the latter especially in the epidermis, but as they do not occur with any regularity, the connective tissue cells and lymphocytes may in the main be said to make up the characteristic infiltration in lichen

planus. Giant cells have also been described by Kaposi, Ledermann, and others, but I cannot substantiate this finding. Connective tissue cells with two or more nuclei are sometimes encountered, and the bodies of these cells, too, occasionally are branched, having as many as three or four processes.

The genesis of the round cells is still under discussion. Many authors believe that they are derived from the circulating blood; others, among them Favera (*Monatsh. f. prakt. Dermat.*, 1909, xlvi, p. 293), that they are largely derived from the pre-existing cells of the perivascular tissue, and therefore are of histiogenetic nature. He reminds that there are cells in the connective tissue and especially in the perivascular tissue which, under the influence of inflammatory irritation, produce forms similar to those of the blood. Marchand applied the name "leucocytoid" to these extravascular cells. Favera, in his experiments on the cell forms of aseptic inflammation, corroborates these views, and he adds the opinion that the property to form leucocytoid cells belongs to some elements which perhaps have a distant ontogenetic relationship with the leucocytes of the circulating blood. Ribbert, also, in his studies on round-celled infiltration, found pre-existing small foci of lymphoid tissue in normal skin in the form of a few perivascular lymphocytes, which he considered the source and initial point of a perivascular infiltration.

The umbilication of the lichen papule has also given rise to much discussion as to its mode of origin. Robinson and Unna believed it was due to the desquamation of a horny peg in the upper part of the sweat duct. Boeck attributed it to the stretching and thinning of the epidermis in a horizontal direction and disturbed nutrition of the epidermis. Róna distinguished a primary and a secondary umbilication; the latter he considered due to central atrophy of the efflorescence, and the primary to the lifting up of the entire epidermis in small areas and the smoothing out of the horny layer so that the mouths of the follicles and ducts become more prominent. In Joseph's opinion, when resolution of the exudative process sets in, the papillæ are no longer able to support the epidermis. Crocker found the explanation in the markedly thickened corneous layer which sinks into the rete in a funnel-shaped manner. Through the elimination of this funnel, the depression arises. With this view I am in accord. As the illustration shows (Fig. 2) in the area where hyperkeratosis is most marked the rete is depressed. With exfoliation of all or a portion of this horny layer the dell

arises. In Vörner's and Favera's cases of mucous membrane lichen, umbilication was also present in lesions of the mucosa.

A rather frequent concomitant of the lichen process is the subepidermic vesicle, more rarely the intra-epidermic one. The former has been looked upon as an artifact and has had various other causes assigned to it. Caspary attributed these subepidermic lacunæ to degeneration and disappearance of the subepithelial connective tissue; Török to loss of cohesion between the epidermis and corium and mechanical separation; Joseph to destruction of a part of the basal layer and adjoining rete; Unna invoked colloid degeneration of the prickle layer and hyalin degeneration of the cutis with partial resorption. The most probable theory is that they are due to the serous exudation at a point where the latter is most intense or the resistance of the epidermis is lowered. Vesicles in the epiderm may be accounted for in the same way. With œdema as a part of the early process, vesicle formation would not be inconsistent even in the beginning of papule formation. In Hebra's opinion they were a mark of involution and only appeared in the regressive stage of the disease. The action of arsenic has also been called in question, but that vesicles occur independently of this drug is supported by numerous instances. I shall only refer to Besnier's case which preceded the evolution of nodules and Kaposi's case of lichen planus pemphigoides in which vesicles developed on diffuse erythematous areas and disappeared with the involution of nodules and erythema. The subepidermic vesicles or lacunæ are usually empty; the contents of the intra-epidermic ones have been described as fibrin, lymphocytes, leucocytes, and eosinophiles, as high as twenty per cent. in Whitfield's case.

The cutaneous appendages unless the site of papule formation show no noteworthy changes. In Crocker's opinion only typical papules form about a sweat duct. This my specimens do not corroborate: neither do I find the coil glands constantly dilated, as pointed out by Unna. This would naturally follow, however, if from accident of position the sweat duct was involved and stopped by a horny plug. The arrector pili muscles are usually somewhat hypertrophied. Biesiadecki associated these muscles with dell-formation, as he found their fixation-point under the most depressed portion of the papule and believed that the muscles themselves were in a continuous state of tetanic contraction. I have several sections with muscles in the centre of the lesion, but the epidermis

arches over them in a dome-shaped manner. I have not been able to demonstrate any changes in the nerves.

The violaceous hue of typical lichen planus lesions has been attributed to the dilated vessels beneath the dense infiltration, but this explanation does not seem adequate, as a similar color occurs in lichenification with a more diffuse infiltration. Lichen lesions are not invariably of this hue, but may be erythematous in the acute cases and ivory-white in the sclerotic type. When the infiltration is admixed with blood cells, a purpuric appearance is produced. The gray points and striæ which Wickham considers absolutely pathognomonic of well-developed lesions are attributed to the thickened granular layer.

The shape of the angular lesion also finds its explanation histologically in the definite circumscription of the lesions, this portion of the skin being elevated above the neighboring normal papillæ and the natural lines of the derma intensified.

In the formation of circinate lesions, small papules may arrange themselves in a ringed manner, an individual papule may undergo central involution or central regression may take place in a plaque. In an annular lesion of the back which I examined, there was a chain of three papules with healthy tissue on each side. In another case of similar lesions, the centre showed more markedly regressive changes than the periphery, in the same manner as that described by Engman.

The pruritus of the skin may possibly be explained by the irritation of the nerve endings by the toxins. Its absence in mucous membrane lesions may be accounted for by the looseness of this tissue, and therefore greater permeability and dilution of the toxins, and also by the action of the alkaline saliva.

In connection with the regressive changes of lichen planus lesions, some of the epidermic and connective tissue cells undergo a pigmentary degeneration with the production of melanin. Its transformation is probably similar to that in typical chromatophores, in which there is an increase in the nucleolar substance with discharge into the protoplasm and conversion into melanin. In the corium a number of cells (Fig. 3) are to be seen with their bodies filled with chromatic particles and one or two granules of pigment; in others, the nucleus only is filled with chromatin, while in the pigmented cells where the nucleus has not been obscured it appears as a pale and

empty shell. Some of these cells are round, others oval or irregular and branched. In the cutis the heaps of pigment are probably the remains of dead cells. Epidermic pigmentation is similar to that found in the cuticular cells with the addition of branched chromatophores in the interspinal spaces.

The follicular variety of lichen planus gives rise to a distinct clinical and histological picture. It is this type which has led to so much confusion on the part of American and foreign dermatologists with pityriasis rubra pilaris. It is not necessary to go into the controversy which these two diseases have brought about, as their recognition as distinct clinical entities is well established and their differentiation both clinically and microscopically a matter of no great difficulty. These follicular lesions are usually associated with planus ones, although Unna claimed that his lichen planus acuminatus neuroticus occurred in a pure form. In one of my cases, of which the accompanying photograph is an illustration (Fig. 4), the eruption was confined to the anterior and lateral surfaces of the knees and legs, a few lesions extending up the thigh. The patient was a woman of forty-two, in good health, giving no history of a cutaneous eruption until two months previous when the present outbreak began. The follicular lesions were the more numerous and varied in size from a small pin-head to a lentil. Some had an erythematous round or slightly irregular base with flat or dome-shaped tops capped by a minute squame. In their centres were horny plugs level with or protruding above the papule. Other lesions consisted of large black prominent horny spines surrounded by a collarette of slightly erythematous or normal hue. These spines all showed a distinct follicular relationship, some were firmly adherent and others could be easily removed with the finger-nail, leaving a gaping mouth. Interspersed with these lesions were small flat and convex angular and round ones and small plaques of a pale violaceous tint. The pruritus was very marked. Microscopically (Fig. 5), in addition to the horny plug extending into and dilating the follicle, there were the usual epidermic changes and the typical infiltration which surrounded and followed the follicle deep into the cutis with the sharp definition characteristic of lichen lesions.

This follicular localization and hyperkeratosis have been attributed to the action of arsenic, but as they are seen in cases where this drug has not been administered, it cannot be considered as the determining factor. It is claimed that they appear in regions where

the lanugo hair development is most marked, but this is not an invariable rule, as the more glabrous parts as the hips and nates may show similar eruption. Some years ago Dr. Pringle had an interesting case of universal lichen planus in which the papules were partly flat and partly acuminate. One morning after the patient had been three or four days in the hospital, his bed was found full of plugs. All the acuminate papules had emptied themselves, only the planus ones remaining, and from that moment, Dr. Pringle said the acuminate element was eliminated from the case. These plugs are sometimes present in lichen planus atrophicus, a feature which Crocker thinks is a diagnostic aid in this form of the disease.

In lichen planus atrophicus or sclerosus, also called by Pawlow lichen planus keloidiformis and by Stower lichen planus morphœicus, we have a rare variety of lichen in which the affected papillæ disappear and are replaced by sclerotic tissue. It has been the cause of great difficulty in diagnosis at times and has led to confusion with the various atrophodermias, certain forms of lupus erythematosus, circumscribed sclerodermia, white spot disease, syphilis and porokeratosis. Dubreuilh and Petges (*Ann. de Dermat. et de Syph.*, 1907, viii. 4th Series, p. 715), in their report of a case limited to the forehead, scalp, and buccal mucosa, venture the opinion that a number of cases published as atypical forms of lupus erythematosus, as idiopathic macular atrophies and *sclerodermie en gouttes* are really atrophic forms of lichen planus, and doubtless if a critical review were made of the literature many more cases would fall in this category.

In Hallopeau's opinion there is a primary and a secondary atrophy; the former beginning as non-pigmented and sclerous lesions, the latter being consecutive to the regressive transformation of typical elements of lichen planus. This view, while not sustained by the majority of dermatologists is probably the most tenable one, for in a survey of the reports of cases of this affection one is forced to the conclusion that in certain instances the primitive condition may be the atrophic one or, as is referred to by some, the sclerotic one. It is, of course, possible that in these apparently primary cases an antecedent evanescent eruption may have been overlooked. The following case which was kindly referred to me by Dr. Hermann Goldenberg, of this city, while it does not correspond clinically in all its essentials with a classical case of this affection, I nevertheless believe belongs to this group. The discrepancy may be explained

by a possible fleeting antecedent infiltration, or it may be one of the instances in which the degenerative changes were primary. The eruption conformed clinically with the so-called "white-spot disease," but microscopically presented close analogies with lichen planus sclerosus and the case of Von Zumbusch's (*Arch. f. Dermat. u. Syph.*, 1906, lxxii, p. 339), reported under the title of "Lichen Albus."

The patient, whom I saw only once, was a woman between forty and fifty years of age, who suffered from some digestive disturbance. The eruption which was present over the chest, back, and legs was discovered accidentally as it had given rise to no subjective symptoms. It consisted of white atrophic spots, sharply circumscribed with wrinkled surface, and varying in size from a small pea to a dime. She asserted that the lesions began as atrophic spots and during the time she was under observation none could be found with any infiltration, the condition therefore being clinically a primary atrophy of the skin occupying small circumscribed areas.

Histologically (Fig. 6), the epidermis immediately over the lesion is depressed; the horny layer is hypertrophied; the granular layer has disappeared or left here and there only a trace, and the rete mucosum is reduced to two or four layers of atrophied and flattened cells. The basal layer has lost its regularity and here and there the degenerated cells have severed their connection with one another. The papillæ are obliterated, and this layer with the upper reticular layer is replaced by a dense tissue taking the acid stains with avidity and having the homogeneous appearance of hyalin degeneration. No elastic fibres were demonstrable in this region. Practically all the blood vessels have disappeared, and the few remaining ones in the lower portion of the lesion show a hyalin degeneration of their walls. At the lower margin of the lesion is a sharply defined infiltration of lymphocytes and some plasma cells. None of the appendages of the skin were present in these sections. Histologically, the condition might be looked upon as a sclerosus, but in connection with the clinical manifestations it is more rational to consider it an atrophy.

After a period of years or less often subacutely, lichen planus lesions develop into lichen verrucosus. There is still a doubt whether primary development as such takes place. Its production and predilection for the lower extremities have been explained by varices and excoriations from pruritus. While these factors are not negligible, they do not wholly explain the verrucose forms met with elsewhere, as the upper arms, scalp and backs of the hands.

In this hypertrophic form there is an exaggeration of the process, all of the layers of the epidermis being enormously thickened and giving rise to an irregular warty growth (Fig. 7). In the papillary and subpapillary layers there is a dense infiltration of lymphocytes and connective tissue cells, and some of the deeper vessels are dilated and surrounded by round cells. Occasionally the development is very excessive and leads to a papillomatous growth, as in a case which I reported in 1897, where papillomatous lesions were present in the popliteal spaces and about the genitals. Microscopically, in addition to the extensive epidermic hyperplasia, there was also a new growth of connective tissue and new-formed vessels. The cellular infiltration did not have the sharp limitation usually met with, but was more or less diffused through the sclerotic tissue. In the papillary layer there were many new-formed vessels and an abundance of fibroblasts, and in the layers below, in addition, lymphocytes and some plasma cells. The endothelium of the vessels was swollen and in many proliferated, while the walls of some were also considerably thickened. Many of the lumina were dilated, and others were obliterated or narrowed by endarteritis and the surrounding infiltrate of organizing cells.

Lichen planus of the mucous membranes was studied as early as 1879 by Hutchinson, but it is only in recent years, in this country at least, that systematic examination of the mucosa is made or any great importance attached to its localization. The value of the diagnosis in these locations is obvious when we consider that lichen of the mouth may precede a cutaneous eruption by weeks or months or remain localized there. Again it may assist in clearing up an atypical eruption on the skin.

Statistically, Heuss places the involvement of the mucous membranes in forty per cent. of the cases; Gautier, in about two-thirds of them; Herxheimer found them implicated ninety-three times out of one hundred and twenty-seven, and Dubreuilh states that there are more cases of mucous membrane lesions alone than of the skin alone.

The cheek is the most important localization site, especially opposite the last molar tooth, extending from here to the commissure of the lips. The tongue comes next in frequency, the free borders being most often attacked, but the under surface or the entire dorsum to the epiglottis may be involved. The lips, external and internal surfaces, the gums, uvula and palate may also be involved alone or in combination. The mucosæ elsewhere are sometimes the seat of

this eruption, as Page found lesions at the orifice of the external meatus and a plaque which extended to the urethra. Marx and Stobwasser demonstrated them on the anal mucosa; Heuss described isolated and linear lesions toward the middle of the pars cavernosa of the urethra. In Lukasiewicz's case the epiglottis and right arytenoid cartilage were the sites of eruption and the larynx, nose and right vocal cord were affected in the case recorded by Polotebnoff. It is probable that the mucous membrane of the stomach and intestine may also be involved in those cases with gastric symptoms and diarrhoea.

The histology of mucous membrane lesions does not differ in its essentials from those of the skin. The accompanying illustration (Fig. 8) is from a lesion of the cheek. It shows the thickened epidermis with irregular basal layer and flattened and stretched middle layers. The papillæ are enlarged and have undergone a hyalin degeneration, consequently the cellular infiltration here is slight and most of the vessels are obliterated. In the subpapillary layer the infiltration is more marked and consists of lymphocytes, fibroblasts and here and there a plasma cell. Some of the vessels in this region are dilated and show a marked hyalin degeneration of their walls.

DESCRIPTION OF PLATES.

FIGURE 1. Zeiss 8 mm., Co. O. 4. An early lesion of lichen planus showing increase in all the layers of the epidermis and beginning depression. The basal layer is disorganized and the dermo-epidermic line obliterated by an infiltration of lymphocytes and fibroblasts occupying the papillary and subpapillary layers. The vessels in the lesion have narrowed lumina or are entirely obscured by the infiltration.

FIGURE 2. Zeiss 8 mm., Co. O. 4. This lesion illustrates the dell-formation and characteristic infiltration in the superior part of the corium. Small subepidermic lacunæ are also to be noted.

FIGURE 3. Zeiss 8 mm., Co. O. 4. Showing the pigmentary degeneration that takes place in the regressive changes of lichen lesions.

FIGURE 4. Follicular lichen planus. Showing grouped and discrete follicular lesions with horny spines intermingled with planus ones on the anterior surface of the leg.

FIGURE 5. Follicular lichen planus. Zeiss 16 mm., Co. O. 4. Showing the follicular openings distended by keratotic plugs and the sharp limitation of the infiltration in the superficial corium and about the hair follicle.

FIGURE 6. Atrophic lichen planus. Zeiss 8 mm., Co. O. 4. The epidermis over the lesion is depressed and slightly sinuous. With the exception of the horny layer which is hypertrophied, the epidermis is reduced in thickness, the rete consisting of two to four layers of atrophied and flattened cells; and the basal layer is disintegrated. The papillary layer has entirely disappeared, it with the subjacent reticular layer being replaced by a dense tissue which has undergone a hyalin change. The majority of the vessels are obliterated; the walls of a few still

PLATE V.—To Illustrate Article by DR. J. A. FORDYCE.



FIG. 1.

PLATE VI.—To Illustrate Article by DR. J. A. FORDYCE.

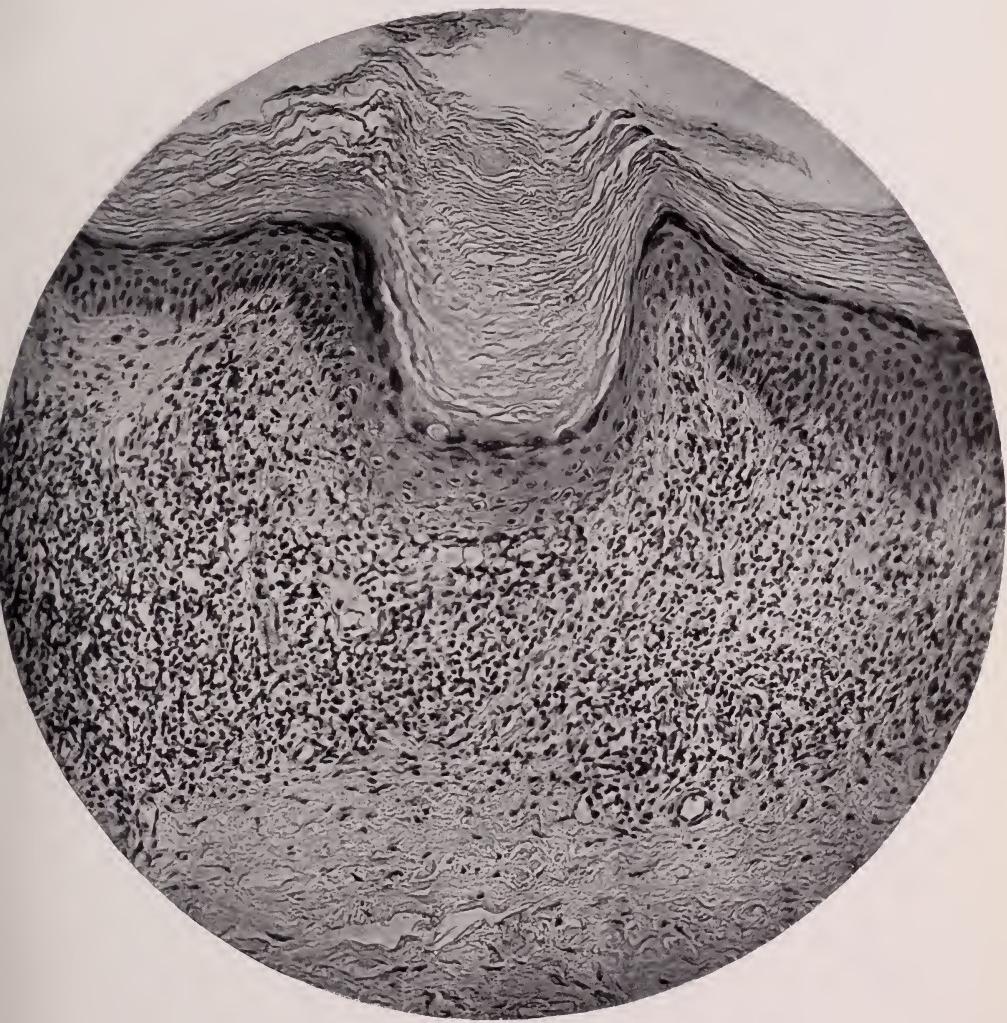


FIG. 2.

PLATE VII.—To Illustrate Article by DR. J. A. FORDYCE.

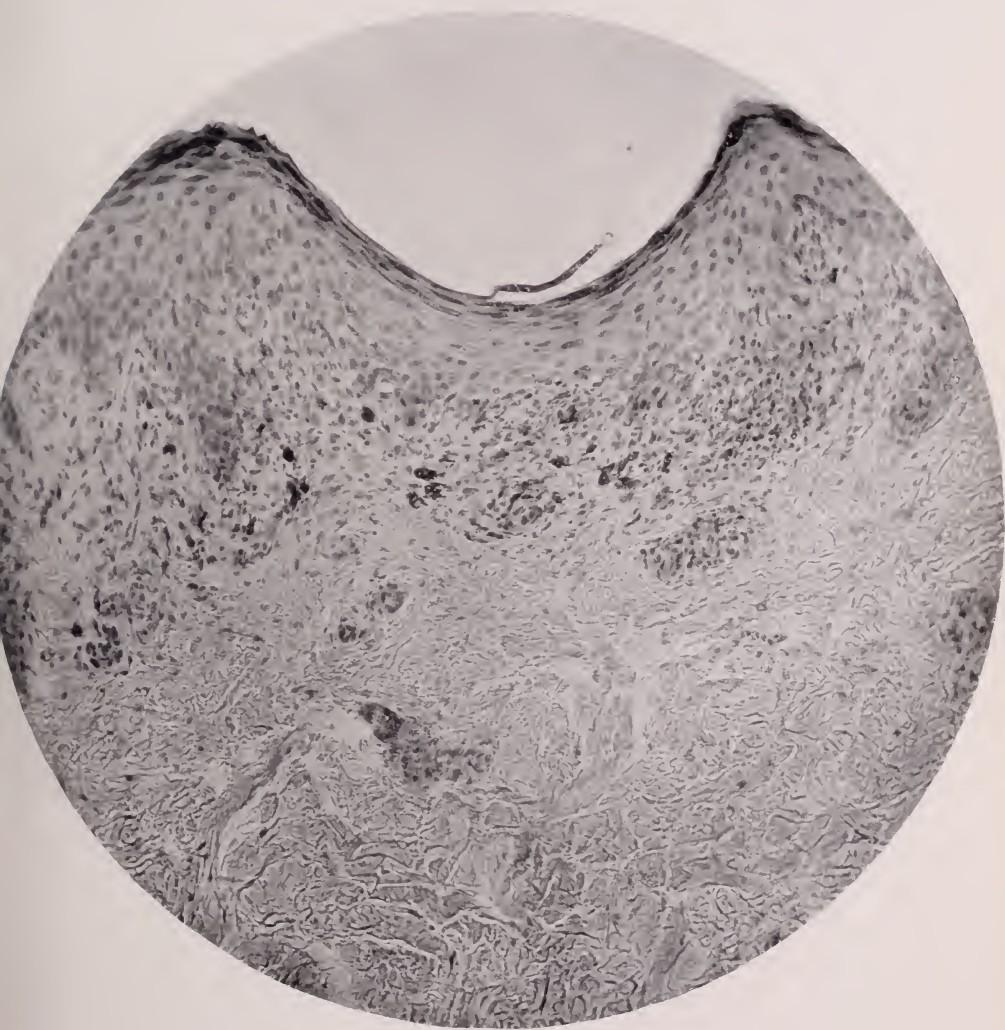


FIG. 3.

PLATE VIII.—To Illustrate Article by DR. J. A. FORDYCE.



FIG. 4.

PLATE IX.—To Illustrate Article by DR. J. A. FORDYCE.

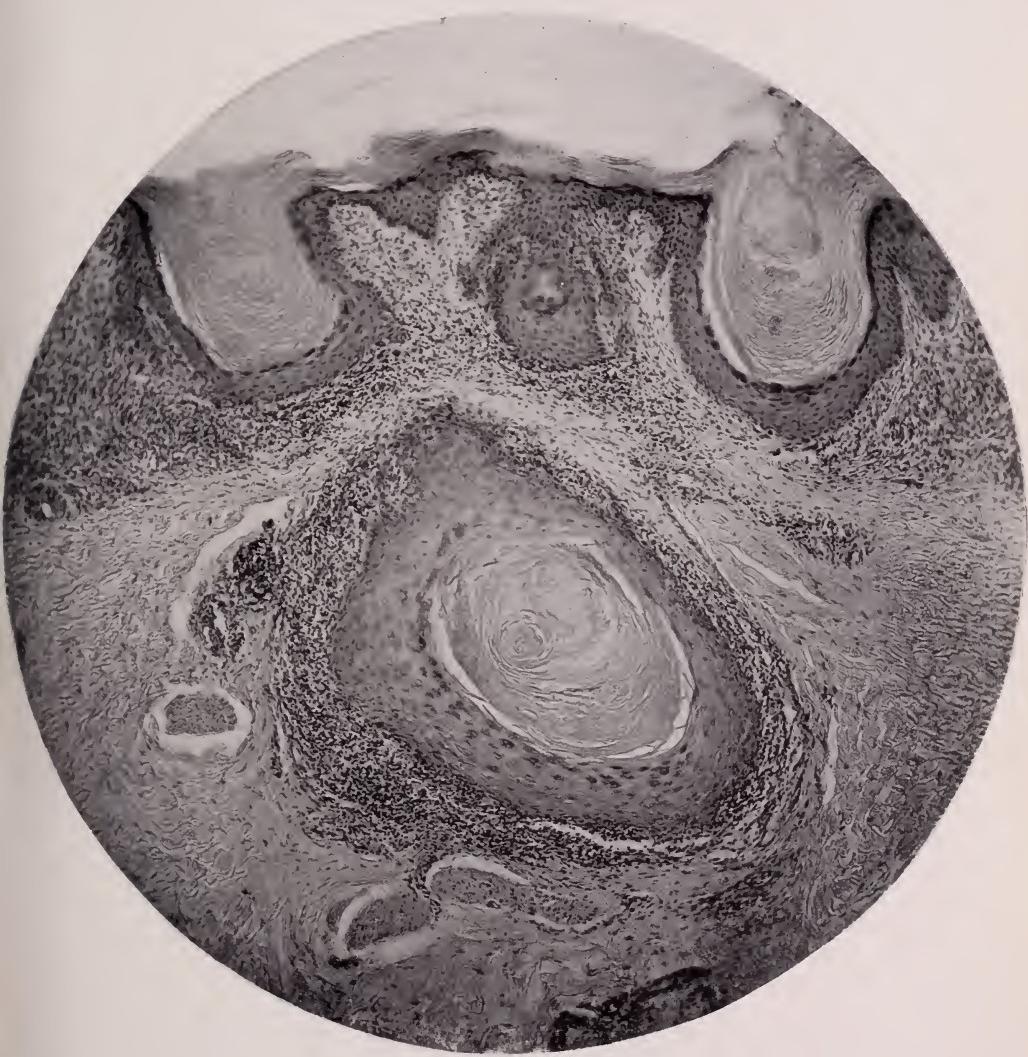


FIG. 5.

PLATE X.—To Illustrate Article by DR. J. A. FORDYCE.

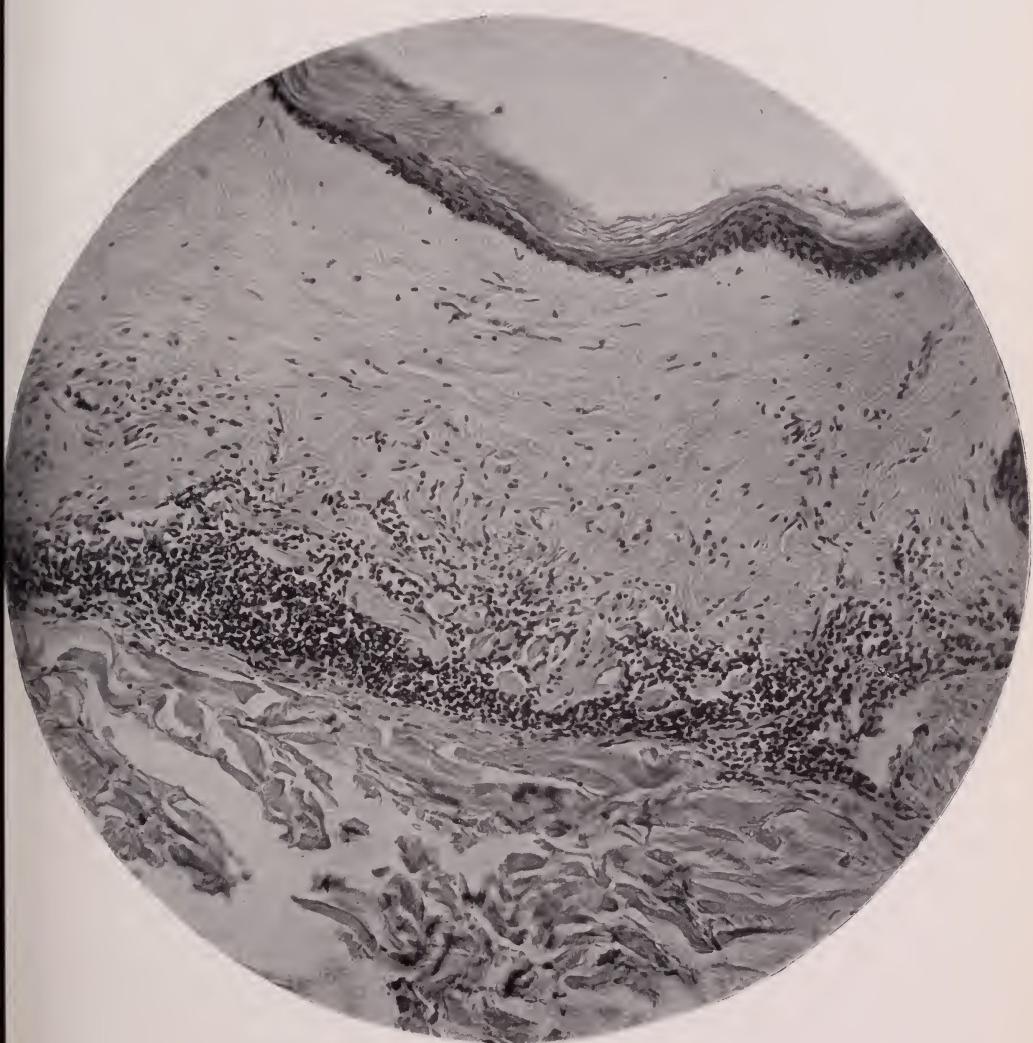


FIG. 6.

PLATE XI.—To Illustrate Article by DR. J. A. FORDYCE.



FIG. 7.

PLATE XII.—To Illustrate Article by DR. J. A. FORDYCE.

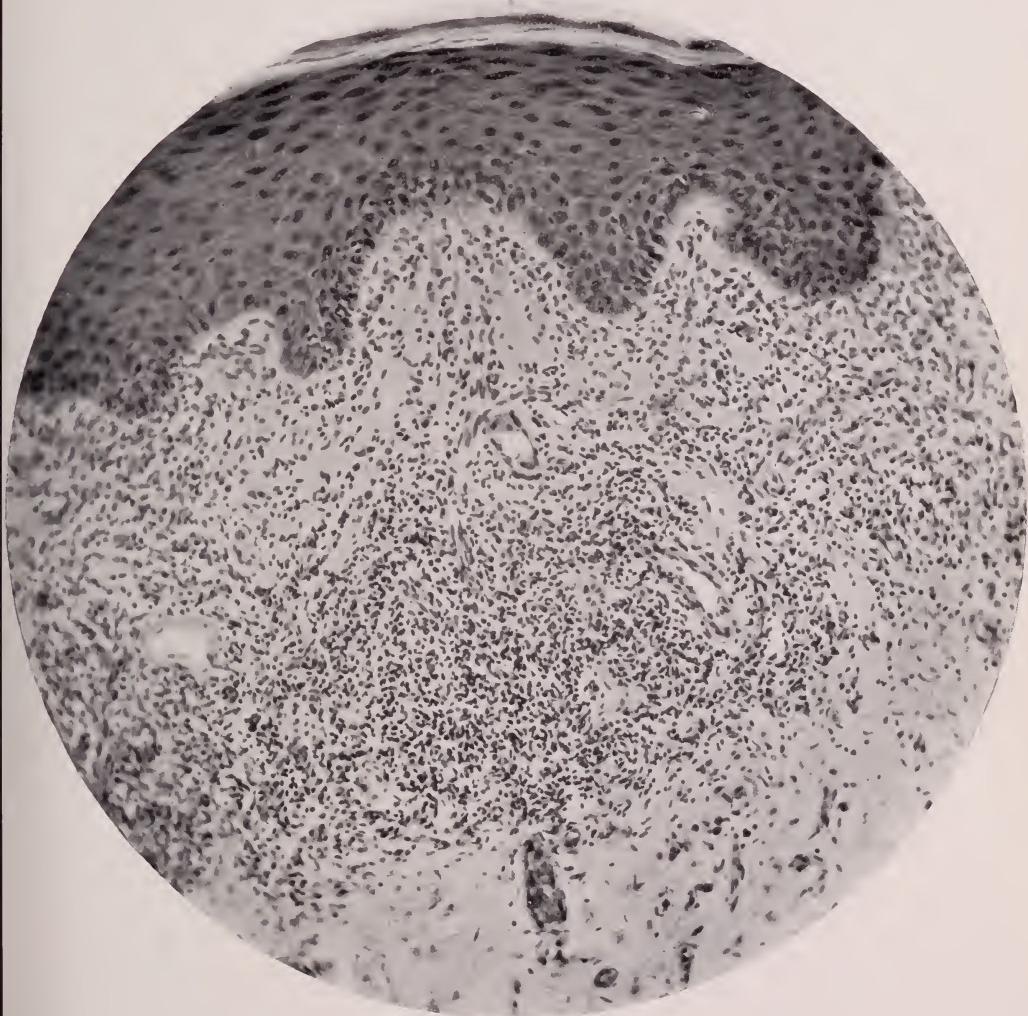


FIG. 8.

visible in the lower portion are in a state of hyalin degeneration. The inferior boundary of the lesion is sharply marginated by an infiltration of lymphocytes and a few plasma cells.

FIGURE 7. Hypertrophic lichen planus. Zeiss Planar 20 mm. Showing the irregular hyperplasia of the epidermis and the sharp limitation of the infiltration of lymphocytes and connective tissue cells. In the reticular layer a number of vessels are dilated and ensheathed by lymphocytes.

FIGURE 8. Lichen planus of the mucous membrane. Zeiss 8 mm., Co. O. 4. A lesion from the cheek showing hypertrophied epidermis; the middle layers of the rete are flattened and stretched. The basal layer is irregular and there are also present some migrated polynuclear cells. The papillæ are enlarged and have undergone hyalin degeneration; in consequence the infiltration is slight and the vessels are obliterated. In the subpapillary layer the infiltration is more dense and consists of lymphocytes, fibroblasts and here and there a plasma cell. Some of the vessels in this region are dilated and the seat of a marked hyalin degeneration.

GRAIN ITCH (ACARO-DERMATITIS URTICARIOIDES): A STUDY OF A NEW DISEASE IN THIS COUNTRY.

BY JAY FRANK SCHAMBERG, M. D., Philadelphia.

In the late spring of 1901, there appeared in Philadelphia and its vicinity an unfamiliar eruptive disease occurring chiefly in household epidemics, which attracted the attention of the various skin specialists of the city. Having had an opportunity of studying about a dozen of these cases, I published in the *Philadelphia Medical Journal*, July 6, 1901, several photographs of the disease and a brief description under the title : "An Epidemic of a Peculiar and Unfamiliar Disease of the Skin." Since 1901, cases of the same character have been encountered each year in Philadelphia, usually between the months of May and the beginning of October. The cause of the disease remained obscure and undetermined despite careful interrogations designed to ascertain the cause of the affection and the explanation of the household epidemicity.

In the spring and summer of 1909, this peculiar eruptive disease became quite prevalent in Philadelphia and neighboring towns. An outbreak among twenty sailors upon a private yacht docked in the Delaware River attracted the attention of both the city and the federal health authorities. The Surgeon-General of the United States Public Health and Marine Hospital Service delegated Dr. Joseph Goldberger, Passed Assistant Surgeon, to proceed to Phila-

adelphia to make an investigation of the disease. Being already engaged in a semi-official study of the outbreak myself, Dr. Goldberger and I concluded to continue the inquiry jointly.*

After carefully examining the twenty sailors who had been sent to a hospital, we visited the yacht whence they came and made a searching examination of the conditions on board. Our attention was directed to the fact that a number of new straw mattresses had been received and that the disease was confined to those who had slept upon these mattresses or had placed their clothes upon them. Eleven officers and members of the crew who did not sleep upon the new mattresses remained entirely free of the disease.

At about the same period information was received concerning a similar eruptive disease prevailing among the sailors of four other boats, plying along the Delaware River. Investigation disclosed the fact that these boats had also received new straw mattresses, and, furthermore, that only those were attacked who slept upon the mattresses or otherwise came in contact with them.

In addition to these cases among sailors, we examined or received authentic information concerning seventy other cases of this disease occurring in twenty different households in Philadelphia and its vicinity.

In practically every instance we were enabled to determine that the patient had either recently slept upon a new straw mattress or had freely handled the same. Where only one person in a household was affected, it was found that he was the only one to occupy a bed supplied with a new straw mattress. We were able to trace all of the incriminated mattresses to four leading mattress manufacturers.

Careful investigation warranted us in excluding from consideration the ticking of the mattresses and the jute or cotton topping contained therein. The cause of the disease was, therefore, circumscribed to the straw. Repeated inquiries elicited the information that all of the manufacturers had received at the time the disease-producing mattresses were made up, wheat-straw from a dealer in Salem County, in southern New Jersey. One manufacturer had used straw from this source exclusively in the infested mattresses.

* The result of this investigation was published by Drs. Goldberger and Schamberg in a preliminary report entitled "Epidemic of an Urticarioid Dermatitis due to a Small Mite (*Pediculoides Ventricosus*) in the Straw of Mattresses. *Public Health Reports*, U. S. Public Health and Marine Hospital Service, xxiv, No. 28, July 9, 1909.

FINDING OF A PARASITE. Dr. Goldberger and the writer sifted the straw from a mattress through the meshes of a fine flour-sieve upon a large plate glass over white paper. Close scrutiny of the siftings under strong electric illumination soon detected some slight motion. The moving particles were touched with a needle moistened in glycerine and transferred to a glass slide. Search with the microscope disclosed the presence of a mite of very minute dimensions. This mite was identified for us by Mr. Nathan Banks, expert in acarina of the United States Bureau of Entomology, as very close to, if not identical with the *Pediculoides ventricosus*.

In order to demonstrate experimentally the ætiological relationship of the suspected straw mattresses, Dr. Goldberger exposed his bared left arm and shoulder for one hour between two mattresses. At the end of about sixteen hours, a number of characteristic lesions appeared upon the arm, shoulder, and chest. Later, three volunteers slept upon the mattresses, and each one developed the eruption at the end of about the same period.

Dr. Goldberger later took some of the sifted straw, divided it into two portions and placed it in two clean Petri glass dishes. One of these was applied for one hour to the left axilla of a volunteer. At the end of sixteen to seventeen hours, the characteristic eruption was present in the area of the left axilla to which the Petri dish of straw siftings had been applied.

The second portion of the straw siftings in a Petri dish was exposed to the vapor of chloroform under a bell jar with a view to killing any insect or acarina that might be present. These siftings were then applied to the right axilla of the same volunteer to whose left axilla the untreated siftings had been applied. The chloroform evidently destroyed in the siftings the agent that was producing the eruption, for no lesions appeared after the application of the chloroformized siftings.

Dr. Goldberger further fished out of some straw siftings five minute mites, and, placing them in a clean watch crystal, applied the crystal to the axilla of another volunteer. At the end of about sixteen hours following this application, five of the characteristic lesions appeared on the area to which the mites had been applied.

ERUPTION. The disease is characterized by an eruption consisting of wheals, many of which exhibit at their summits a central pin-point-sized vesicle. This is the peculiar lesion of the disease, and is so characteristic as to immediately suggest this affection.

The contents of the vesicle are clear but for a brief period of time, and then become lactescent or distinctly puriform, constituting a well-marked pustule. Instead of frank wheals, the efflorescence may consist of barely elevated, erythematous-urticular spots or papulo-urticular lesions. The latter are œdematosus in character, but have the size and shape of papules. The lesions generally vary in size from a lentil to a finger-nail, and are rounded, oval, or irregular in shape. They are œdematosus like the wheals of ordinary urticaria and are not infrequently elevated 1 to 2 mm. above the level of the skin. The color is usually a warm rose tint; only rarely do the lesions exhibit the pinkish-white anaemic area seen in ordinary "hives." The central vesicle or pustule is usually minute, not exceeding in diameter 0.5 mm.; in many cases it is pin-head in size (about 2 mm.); exceptionally the vesicle or pustule may reach a diameter of 3 mm. In such cases, the large vesicles situated upon an erythematous-urticular base present a strong resemblance to the lesions of chicken-pox. In many patients the tops of the lesions are so excoriated by scratching that no vesicles are seen; instead the wheals are surmounted by punctiform, dark red blood crusts.

The eruption varies in extent in different subjects; usually it is profuse, involving the neck, chest, abdomen, and back, and in a lesser degree the arms and legs. The greatest number of lesions is observed upon the trunk. The face is often free, although at times scattered lesions are present. The hands and feet are nearly always exempt. The extent of the eruption and the size of the individual lesions are apt to bear an inverse relation to each other. In the most profuse eruptions, 10,000 or more lesions may be present.

In rare instances, the eruption may undergo modification and take on the characteristics of the macular type of erythema multiforme. I noted this especially in the sailor patient shown in figure 6. The eruption on the face in this man was profuse and there was an erythema involving both of the lower eyelids. In another patient there was, in addition to the usual eruption, a partial scarlatinoid rash involving the anterior and lateral surfaces of the chest. This patient had fever, nausea, chilliness, and vomiting.

There are, therefore, three varieties of the eruption: in the order of their frequency they are—(1) urticaria-vesiculo-pustulosa type, (2) varicelloid type with large central vesicle or pustule, and (3) erythema multiforme type.

The eruption is usually accompanied by the most intolerable

itching. This is worse at night and seriously interferes with sleep. The itching leads to violent scratching with the consequent production of excoriations and blood crusts, and at times pyogenic infection of the skin.

SYSTEMIC SYMPTOMS. During the early days of the attack the patient may experience chilliness and in some cases nausea and even vomiting. Mild rigors may recur throughout the course of the next few days. The temperature may be elevated from 100° F. to 102° F., or higher, with corresponding acceleration of the pulse rate; this pyrexia may continue for several days. It is, however, a very variable symptom and is often lacking. Some patients, although afebrile, complain of malaise and anorexia; others do not admit being ill at all. Indeed, even the patients with some elevation of temperature are not inclined to seek their beds. There is at times a moderate enlargement of the superficial lymphatic glands.

BLOOD EXAMINATIONS. The twenty sailors previously referred to were treated in the Marine Hospital Wards of St. Agnes Hospital. The resident pathologist of the institution, Dr. John Albert Kolmer, made, at my suggestion, careful examinations of the blood. Dr. Kolmer's report is herewith subjoined :

BLOOD EXAMINATIONS.*

TABLE I. JUNE 8, 1909.

Number	LEUCO- CYTES	LYMPHOCYTES		TRANSI- TIONALS	POLYMOR- PHONU- CLES	EOSIN- OPHILES	MAST CELLS	DAY OF DISEASE	EXTENT OF ERUPTION
		SMALL	LARGE						
1.	7,040	27	11.5	.2.5	57.5	7.5	0	4th day	Moderate.
2.	10,400	16.15	10	1.15	69.22	3.13	.34	15th day	Moderate.
3.	10,160	24.8	4.8	.4	68	2	0	6th day	Moderate.
4.	7,800	24	11.11	.55	55	9.33	0	15th day	Scant.
5.	7,100	23.8	11.9	.2.88	54.35	7.14	.5	5th day	Scant.
6.	10,600	25	3.5	1	64.5	6	0	4th day	Profuse.
7.	10,000	23	9	.5	62.5	5	0	6th day	Profuse, multiform erythema [type.
8.	6,000	20	5.33	.88	71.11	2.22	.44	5th day	Moderate.
9.	6,700	23.8	11.9	.47	61	2.38	.47	6th day	Moderate.
10.	7,000	41.38	3.51	1.37	51.69	.68	1.37	7th day	Profuse.
11.	7,100	40	11	1	45	3	0		Moderately profuse.
12.	11,100	22	4.5	1	62.5	10	0	4th day	Profuse.
13.	9,900	27.5	7	1	62.5	2	0		Very profuse, recurrent.
14.	5,700	29.37	8.12	.62	55	6.25	.62		Profuse.
15.	8,300	14.01	7.91	.41	73	4.16	.41	5th day	Moderate.
16.	9,000	32.2	4.34	.43	54.34	7.82	.87	5th day	Profuse.
17.	10,000	44.44	9.61	1.92	38.59	5.44	0	5th day	Moderate.
18.	8,200	37.05	8.82	1.2	47.05	5.88	0	7th day	Moderate.
19.	6,300	30	10.5	1	56	2.5	0	6th day	Moderate.
20.	6,500	28.8	5.67	.56	59.65	5.67	0	6th day	Quite moderate.

Avg. 8,245 27.71 7.95 1.01 58.12 4.9 .22

* From Clinical Laboratory of St. Agnes Hospital.

BLOOD EXAMINATIONS.*

TABLE II. JUNE 12, 1909.

NUMBER	LEUCOCYTES	LYMPHOCYTES		TRANSITIONAL	POLYMORPHONUCLEAR	EOSINOPHILES	MAST CELLS	SPECIAL CELLS
		SMALL	LARGE					
1....	7,000	28.2	13.63	.9	54.54	2.72	0	0
2....	8,600	20	7.59	.76	69.25	2.5	0	0
3....	8,000	30.64	9.37	.62	56.25	1.87	1.24	0
4....	10,000	25.63	8.54	.85	64.1	.87	0	0
5....	6,800	24.17	10.34	1.37	55.16	7.58	1.37	0
6....	8,800	35.66	8.66	4.66	46.66	4.66	0	0
7....	5,400	28.63	5.23	.47	64.28	2.38	0	0
8....	8,000	40.86	4.16	.83	51.66	1.66	.83	0
9....	8,000	31.79	1.76	.58	64.7	1.16	0	0
10....	6,700	38.46	3.16	.66	57.06	.66	0	0
11....	8,000	26.25	5.62	1.87	64.39	1.87	0	0
12....	8,000	21.82	10.45	1.81	64.56	.45	.9	0
13....	6,200	25	5.83	1.66	64.17	3.33	0	0
14....	7,500	31.81	6.84	1.13	59.65	.56	0	0
15....	8,100	28.88	10.24	.88	55.55	3.11	1.33	0
16....	7,500	25.24	3.93	.56	64.6	5.11	.56	0
17....	6,000	25.26	8.42	.52	63.17	2.1	.52	0
18....	8,800	28.07	3.04	1.21	62.8	4.87	0	0
19....	5,600	33.15	4.57	.57	58.85	2.28	.57	0
	6,100	31.23	1.33	.55	58.33	1.55	0	0
Average	7,470	29.03	6.63	1.12	59.99	2.56	.37	

* From the Clinical Laboratory of St. Agnes Hospital.

JOHN ALBERT KOLMER, M. D.

SUMMARY OF BLOOD EXAMINATIONS.

Date	Leucocytes	Lymphocytes		Transi-	Polymor-	Eosino-	Mast
		Small	Large		phonu-	philis	Cells.
June 8.....							
June 12.....	8 245 7 470	27.7 29.03	7.95 6.63	1.01 1.12	58.12 59.99	4.9 2.56	.22 .37

Two examinations were made in each case. Due care was exercised in avoiding digestive leucocytosis. Wright's stain was used throughout. In each case two smears were examined in every instance.

One must examine the tables and not the averages to appreciate the blood changes. Examination will show:

- That a moderate leucocytosis was present in most cases during the acme of the disease.
- That the eosinophilia was well marked in the larger number of cases at the height of the eruption.
- Both the leucocytosis and eosinophilia subsided with improvement of the symptoms.
- That the other leucocytic elements show no particular changes.

The urine was examined on several occasions by Dr. Kolmer. The results are seen in the accompanying table.

URINE EXAMINATIONS.*

JUNE 7, 8, 9, 1909.

NUMBER	COLOR AND SEDIMENT	SPEC. GRAV.	REACTION	ALBUMIN			INDICAN DIAZO	UREA	MICROSCOPICAL
				SUGAR	—	—			
1.	Yellow and cloudy	1.029	alk.	—	—	—			Triple phosphates; bacteria; epithelium; debris.
2.	Brown and cloudy	1.030	alk.	—	—	—	+		Calcium carbonate; amorphous phosphates.
3.	Dark yellow, clear	1.024	alk.	—	—	—			Triple phosphates; granular debris.
4.	Yellow and cloudy	1.022	alk.	—	—	—			Triple and amorphous phosphates.
5.	Brown and cloudy	1.019	alk.	—	—	—			Calcium carbonate; crystalline phosphates,
6.	Pale yellow, cloudy	1.018	neutral	—	—	—			Crystalline phosphates.
7.	Pale lemon, cloudy	1.015	alk.	—	—	—	+		No crystals; few epithelial cells and granular material.
8.	Lemon and cloudy	1.020	acid	—	—	—	+	57 34	Negative.
9.	Pale yellow, clear	1.012	acid	—	—	—		17.6	Negative.
10.	Amber, cloudy	1.032	alk.	+	—	—	+		Triple phosphates; amorphous deposits; no casts.
11.	Dark amber, cloudy	1.025	acid	+	—	—		21.33	Negative; no casts.
12.	Pale lemon, cloudy	1.013	alk.	—	—	—			Amorphous phosphates.
13.	Amber, cloudy	1.022	alk.	—	—	—			Triple phosphates; bacteria; amorphous deposits.
14.	Yellow, cloudy	1.024	alk.	—	—	—			Amorphous phosphates; bacteria; epithelium.
15.	Yellow, clear	1.015	alk.	—	—	—		24.78	Negative.
16.	Pale lemon, clear	1.010	alk.	—	—	—		30.98	Few epithelial cells.
17.	Amber, clear	1.030	alk.	—	—	—			Triple and amorphous phosphates; calcium carbonate.
18.	Yellow, cloudy	1.030	alk.	—	—	—			Triple phosphates.
19.	Amber, clear	1.022	alk.	—	—	—			Triple phosphates; calcium phos-
20.	Brown, cloudy	1.027	alk.	++	—	—			No casts.
JUNE 12, 1909.									
10.	Lemon, cloudy	1.022	alk.	—	—	—			No casts; triple phosphates; bacteria.
11.	Amber, clear.	1.026	acid	—	—	—			Negative.
20.	Light yellow, cloudy	1.025	acid	—	—	—			Negative.

* From Clinical Laboratory of St. Agnes Hospital.

JOHN ALBERT KOLMER, M. D.

It will be observed that albuminuria was present in three cases. A more recent contributor to this subject, Dr. Lyman T. Rawles, of Huntertown, Indiana, has also noted albuminuria in several of his patients. This condition is probably analogous with the albuminuria which not infrequently accompanies scabies. Nicholas and Jambon found albumin in the urine sixteen times in one hundred cases of scabies.

MICROSCOPIC EXAMINATION OF LESIONS. A vesico-pustule on an urticarial base was excised for microscopic study. Description of a section stained with polychrome methylene-blue and orange: Over the region of the vesico-pustule there is seen under low power a circumscribed elevation of the epidermis. The horny layer is represented by merely one or two layers of corneous strands. The

stratum granulosum is absent. Two layers of fusiform rete cells with reddish cell bodies and bluish nuclei extend from the lateral portion of the roof of the vesicle towards the middle, but are lost over the central area. No vertical cleavage is present in the centre suggestive of a puncture by a parasite, nor is any parasitic appendage noted anywhere in the skin. Several layers of rete cells with large oval unstained nuclei lying subjacent to the horny stratum fail to take the polychrome stain, but are colored yellow with the orange. Beneath this altered rete is an enormous mass of deeply stained leucocytes with detached Malpighian cells lying in the interspaces. The blood vessels and lymphatic spaces laterally adjacent to the epidermal elevation exhibit a considerable dilatation.

CORIUM. Subjacent to the epidermal vesico-pustule, the corium from the papillary layer to its deepest portion shows a circumscribed dense cell mass. This is made up chiefly of round cells, but in certain areas there is a considerable admixture of polymorphonuclear leucocytes. In the mid-corium, the latter are seen in large number lying in the lumina of dilated blood vessels and mantling their walls; they are also seen here and there between the collagenous bundles. The exudation can be traced down to a coil of sweat glands. The dilated vessels leading to and from the glands exhibit a large number of round and polymorphonuclear cells in and around them. These cells likewise surround some of the deep-seated sweat coils. Mast cells are present in abundance, particularly in the middle and deeper portions of the corium and more especially in the neighborhood of the blood vessels. They are oval, stellate and fusiform with granules that take the stain well.

Fragmentation of the leucocytic nuclei is present to a limited degree. The histopathological changes are essentially those of an urticarial lesion.

PRODUCTION OF THE CUTANEOUS LESIONS. Unlike the scabies mite, the pediculoides does not burrow into the skin. Microscopic examination of vesicles and pustules has demonstrated the absence of the mite or any part thereof beneath the surface of the skin. The probabilities are that the pediculoides in the process of extracting liquid nourishment from the skin, synchronously injects an irritating substance which gives rise to the lesions.

Upon this phase of the subject, Laboulbene and Megnin, quoted by Moniez, say: "One cannot doubt that this acarus is endowed with a venomous saliva, the inoculation of which is principally the cause of the death of the larvae and nymph insects on which it lives and

multiplies. This saliva is secreted by four pairs of vesicles disposed along the œsophagus and opening into the larynx. The emission of this saliva follows immediately upon the puncture by the mandibles acting as a lancet."

DIAGNOSIS. The affection is apt to be confounded in different cases with one of three diseases—urticaria, chicken-pox, and scabies. I have known many such errors to be made. In one case with a particularly profuse eruption, the patient was under suspicion of suffering from smallpox.

The affection may be distinguished from ordinary "hives" by the longer duration of the individual lesions, by the central vesiculation, the constitutional disturbance, the greater persistence of the attack and the occurrence of the disease among groups of persons.

Chicken-pox, which is at times quite closely simulated by the eruption, may be excluded by the duration of the disease, the smallness of the vesicle, the violence and persistence of the itching and the great incidence of the disease among adults.

Scabies or "itch" may be strongly suggested when the lesions are excoriated by scratching; it may be eliminated from consideration by the freedom of involvement of the hands, by the uniform eruption of erythematous-urticular lesions surmounted by small vesicles, and by the distribution of the eruption.

Pediculosis corporis could be excluded by studying the character of the individual lesions and by the failure to find the pediculi.

The history of contact with straw is, of course, of great diagnostic value.

TREATMENT. As the pediculoides does not burrow beneath the skin, but merely perambulates upon the surface, it is a comparatively simple task to rid the patient of the parasites. Frequent warm baths with the use of soap would doubtless suffice. I have found the following ointment especially efficacious, as it not only destroys the mites, but also relieves the cutaneous symptoms:

R Betanaphthol	gr. xxx.
Sulphur. Præcip.	gr. xl.
Adipis Benzoat.....	5 <i>l.</i>

In order to prevent reinfection of the patient, his clothing should be disinfected either by boiling or careful sulphur or formaldehyde fumigation. Where the source of the parasites is a straw mattress, the latter may be rendered free of the mites by exposure in a closed chamber to steam, sulphur fumes, or formaldehyde.

Ordinarily, the itching will subside within twelve to thirty-six hours, and the eruption will disappear in a week or ten days. Where, however, the cause is not recognized and the use of the mattress is continued, I have known patients to suffer severely for periods varying from three to seven weeks, when gradual recovery would take place. It would seem, therefore, that the mite dies after a time and permits the patient to get well.

It should be remembered that the disease may be contracted from straw used for other purposes than mattresses. Patients have acquired the disease from straw used for packing purposes, from straw used under carpets, from contact with plants mulched with straw, etc. Sacks of infected wheat, barley, and other grains have likewise given rise to the disease.

NEW DISEASES IN THIS VICINITY. The affection above described was simultaneously observed by various skin specialists of Philadelphia in 1901, and recognized by them at that time as a new disease in this vicinity. While there is evidence to show that this disease is far more prevalent in the United States than was at first thought, yet the clinical picture is unfamiliar to specialists in most of the large cities of this country. At a meeting of the American Dermatological Association held in Philadelphia in June, 1909, I exhibited a patient showing the characteristic eruption of this disease before prominent skin specialists from New York, Boston, Chicago, St. Louis, San Francisco, London, etc. The dermatologists from these localities stated that they had not encountered any cases of the character presented.

Within recent months, however, I have received letters from physicians and laymen residing more particularly in Ohio, Indiana, and Pennsylvania alleging that a disease of this same nature has prevailed from time to time during recent years in their sections. Most of these letters came from towns in Ohio, particularly Zanesville, Columbus, Vincent, Springfield, etc., where the affection is popularly believed to be due to "jiggers." A physician from the last named town writes that in the fall of 1908, during harvest and threshing time, he saw in Washington County some eighty-seven cases of the disease in question. It affected the harvesters and threshers. This spring he observed thirty-eight cases from contact with straw ticks refilled with straw of last fall's crop. The disease is said to have been more prevalent last year than ever before. Information has come from Columbus, Ohio, that potters who used

straw for packing have been so badly attacked at times that the entire force of packers has been off duty. Many times a whole car-load of straw has been so infested that the use of it has been abandoned. In Springfield, Ohio, it is said that the disease was so bad a year or two ago in the lowlands west of this city as to seriously hamper the progress of the construction of a large sewer. In Zanesville, Ohio, the potters have been obliged to abandon the use of straw and employ "prairie hay" for packing purposes.

I am informed by a physician of Pittsburg that a young woman patient has suffered from an affection closely resembling, if not identical, with the one under consideration, each time that she has assisted in emptying cases of dishes packed in straw. Both the physician and the patient had come to believe that something in the straw was the cause of the eruption.

In August, 1909, Dr. Lyman T. Rawles, of Huntertown, Ind., published a paper on the "Straw Itch" (*Indiana State Medical Journal*, August, 1909), in which he reported a series of thirty-seven cases of the disease under consideration occurring in eight families under his observation and twenty-four cases occurring in the practice of Dr. H. A. Ray. Dr. Rawles states that the disease first appeared in his section of the country in epidemic form in May, 1909. The people generally attacked were farmers and those living in small villages where straw is used in beds, under carpets and around stables. Horses and cattle have been seen with a disease almost identical with that seen in man.

Dr. Rawles gives an excellent description of the disease from which it is evident that the affection is identical with that observed here in Philadelphia. A mite was found in the straw and likewise certain insect hosts. I had an opportunity of seeing this mite through the courtesy of Professor F. M. Webster, of the Bureau of Entomology, Washington, and it is the same that we have found in our cases.

Dr. W. Kenneth Wills, of Bristol, England, published in the *British Dermatological Journal*, August, 1909, a series of cases of "barley itch," occurring in some fifteen grain porters who had unloaded a cargo of barley coming from Casa Blanca, West Africa.

The itching began within a half hour of the commencement of the work. A profuse, rose-colored papular eruption of an urticarial nature was present mainly on the chest and abdomen, but also on the neck, face, arms, forearms, shoulders, and a few on the

back and legs. The men had had no sleep for several nights on account of the itching.

Dr. Wills, after a painstaking study, came to the conclusion that the urticarial lesions were due to vegetable hairs in the barley dust. Acari were found by one of the experts consulted, but were so macerated that they could not be classified. This was unfortunate, as they doubtless would have been identified as "pediculoides" and their agency in the production of the eruption suspected.

PREVALENCE OF THE AFFECTION ELSEWHERE. Professor F. M. Webster, of the Bureau of Entomology, of the United States Department of Agriculture at Washington, informs me that a letter received by him from a farmer in Centreville, eight miles north of Dayton, Ohio, contains the following information: "About four years ago a parasite was found when threshing wheat out of barns. The eruption consists of hive-like spots with a water-like blister, which changes to pus and then small scabs. Recently baled wheat straw bought by a farmer seemed to be alive with the parasites. They attacked everyone that went into the barn and one of my horses that was perspiring from the effects of a drive was simply covered with little knots or swollen places, and bit and rubbed himself continuously. The farm hands have a great fear and dread of the condition."

In September, 1908, upon unloading a car-load of baled wheat at Pittsburg, a half dozen men and even the horses used in hauling the straw "became suddenly attacked by an irritation that affected both men and animals after the manner of poison ivy." The straw came from Washington Court House, Ohio. The "Isosoma tritici" were found in samples of the straw, but no search was made for the Pediculoides ventricosus, as the causative relation of this mite was not known to the investigator at that time.

In another letter received by Professor Webster, the writer states that in the neighborhood of Waterloo, Indiana, from July to November, 1908, "a parasite in the wheat was so bad that the people at threshing time were almost crazy." In the Spring of 1909 people who used straw chaff ticks were "about crazy with the itch, as they called it." The bitten spots "would swell and be inflamed with a yellow spot in the centre which contained either water or yellowish matter." The writer found the Pediculoides ventricosus or the joint-worm (*Isosoma tritici*) present.

Three cases of "grain itch" due to sleeping on straw mattresses

were recently observed in Baltimore. A number of people in a suburban hotel were also said to have been affected. (From a letter received by Professor Webster of the Bureau of Entomology, Department of Agriculture, Washington, D. C.)

POSSIBLE EXPLANATION OF THE SEASONAL PREVALENCE OF "GRAIN ITCH." As has been previously stated, cases of "grain itch" have been observed to appear in Philadelphia each year since 1901 about the early part of May. The straw which contains the mite is said to have been stored for a considerable time in barns. In view of the life history of the grain moth, it is possible that as the warm weather of May comes on, the grain moth in the straw develops from the larval stage and, acquiring wings, leaves the straw, thus depriving the pediculoides of their nourishment. The famished mites thereupon attack human beings when brought into contact with them.

HISTORY OF THE PEDICULOIDES VENTRICOSUS AND ITS ATTACKS UPON MAN. A search of the literature has revealed the information that the Pediculoides ventricosus or other allied species has been reported in Europe to have attacked the human subject.

Newport, of England, in 1850, gave the name "Heteropus ventricosus" to a mite found on the larva of a wasp. Since this time, the mite has been found on various soft-bodied insects both dead and alive. As the name heteropus was preoccupied, Targioni-Tozzetti, in 1875, employed the name "Pediculoides ventricosus."

R. Moniez (*Traité de Parasitologie Animale et Végétale, Appliquée à la Médecine*, Paris, 1896), in his admirable book on Animal and Vegetable Parasitology, gives an account of outbreaks of eruptive disorders in which the pediculoides was found. The following material is translated and abstracted from the book of Moniez:

1. Observation of Lagrèze-Fossat (naturalist) and Montané (pharmacist). In 1849, in Espalais (France) a number of men engaged in carrying and handling sacks of wheat experienced immediately thereafter violent itching. The wheat in question was sent to Bordeaux and Moissac, where the same symptoms were produced on workmen who unloaded the cargo; the men refused to work on account of severe itching which developed immediately on the chest, arms, face, neck and shoulders. Some said the itching was worse than that caused by the "itch." In the majority of workmen, the irritation of the skin was followed by an eruption of papules more or less inflamed, some of which contained serum. The matter was brought to the attention of the Board of Health of Bordeaux. Experts later reported the presence of numerous mites in the wheat.

The wheat after being washed and dried in the sun was rendered free of the mites, and the workmen who transported it thereafter remained free of itching.

The mémoire just analysed was accompanied by a drawing of the incriminated parasite. This belongs to the genus pediculoides. The writer gave the name "Acarus tritici" to the mite. (Lagrèze-Fossat et Montané, "Sur la Mite du Blé." *Registre agronomique de la Société des sciences d'agriculture et belles lettres de Tarnet-Garome, 1851, xxxii.*)

2. Observation of Robin. In 1867, Robin, in the name of M. Rouyer, communicated to the Société de biologie, the relation of a cutaneous disease observed epidemically in a large number of communes of the department of l'Indre during the previous summer. The peasants engaged in gathering the wheat after the long rains of summer, developed an itching eruption on all exposed parts of the body. The disease began with severe itching which lasted several hours and was followed by reddening of the skin and a miliary eruption covering the surface. The eruption disappeared in three to four days spontaneously or after the use of lotions of vinegar. M. Rouyer saw on the surface of the skin of these patients a great number of small black points which moved. He noted the same on the diseased wheat. Further study showed the presence of the Acarus or Pediculoides tritici. (Robin, C. R. *Séances et mémoires de la Société de biologie, 4th series, 1867, iv, p. 178.*)

3. Observation published by the *Santé publique*, May 1, 1872. (Extract.) A baker in the canton of Crémon received a number of sacks of wheat from Bordeaux. Five men who carried the sacks promptly developed severe itching on the back, shoulders and arms, and then an eruption of somewhat pointed red papules. This eruption during the night became generalized over the body and led to fever, insomnia, agitation and marked thirst. Fear seized the patients and their families, who thought themselves poisoned. Experts were charged to examine the wheat and determine the cause of the trouble. The Acarus tritici was found in the wheat. The journal continues: "It is the wheat-mite, a microscopic insect analogous to the Acarus scabiei, which on the human skin, causes the 'itch.' The condition caused by this mite has been called 'grain fever.' Prolonged tub baths cause a disappearance of the itching and of the eruption."

4. Targioni-Tozzetti, in 1875, reported an eruption produced in a laborer who had carried sacks of wheat. A drawing of the

parasite accompanied the report. (Targioni-Tozzetti, "Relazione intorno ai lavori della Statione di Entomologie agraria di Ferenze per l'anno 1876," *Annali dell'Agricoltura*, 1878, i.)

5. In 1879, Geber, (Geber, "Entzündliche Prozesse der Haut durch eine bis jetzt nicht bestimmte Milbe Verursacht;" *Wien. med. Presse*, 1879, et v. Ziemssen's Handb. spec. Pathol. u. Therapie, xiv, Handb. d. Hautkrank., 1884, ii, pp. 412), observed in Lower Hungary an eruptive epidemic coming from barley, and due to a small animal parasite. This will be referred to later.

6. Koller's Cases. In July, 1882, thirty-six workmen in Budapest, who were engaged in unloading sacks of barley coming from Kalafat, Roumania, were seized within a half hour by intense itching. The phenomena increased in intensity during the several succeeding days. The neck, chest, arms, abdomen and thighs presented crowded vesicles, the largest of which were millet-seed-sized upon inflamed bases. The patients could not sleep during the following night. Several years previously, the same author had observed a similar malady contracted after unloading sacks of wheat from a boat.

Professor Howath found a mite in the wheat which completely resembled that described by Robin. Several years prior to this, similar observations had been made on the banks of the Theiss and there was no other way of avoiding the trouble but to submerge the boat with its' cargo. At the time Koller observed these cases, the same trouble was observed at Cologne with wheat coming from Russia. (Koller, G. "Eine Getreide-Milbe als Krankheitserregerin." Analysed in *Biol. Centralbl.*, 1884, iii, p. 127.)

7. Fleming (Fleming, J. "Ueber eine Geschlechtsreife Form der als Tarsonemus beschriebene Thiere," *Zeitschr. f. Naturwissenschaft.*, 1884, lvii, p. 472, pl. 2), in 1884, published an analogous observation to the above. Workmen in Klausenburg, who unloaded wheat imported from Russia, were suddenly seized with an eruption similar to the "itch." It was recognized as being caused by the mites which were found by Fleming.

"The following observations have not been reported by the authors who have recently occupied themselves with this question. We give in extenso three interesting analyses which we owe to Berther and which have been written in a review but little known." (Translated from R. Moniez, *Treatise on Parasitology*) [*Journal de Médecine et de Pharmacie de l'Algérie*, xlvi, pp. 103, 888.]

CUTANEOUS ERUPTIONS FROM THE DUST OF GRAINS OR CEREALS.

1. "Some time ago," said Professor Layet, "my friend, Dr. Mondot, (D'Oran) communicated to me the observation of several cases of fever with cutaneous eruptions of an erythematous and vesicular character, occupying the exposed surface of the body, namely, the face, neck and hands. The affection developed in persons who had sojourned in a neighboring room to an apartment containing moist barley coming from Silos. In the yard of this habitation our colleague saw several dead chickens and he was told that for a week they had been found this way every day. In the stable a horse was sick and showed on the neck a pustular eruption. The barley had been purchased twelve days before and the chickens and horse had eaten of it at this time. Dr. Mondot sent me a sample of this barley. At first sight I found nothing particular in it, but in placing the grain in a moist, hot, shaded place, I observed the appearance on the grain itself of a whitish dust. I could not determine the nature of this dust which appeared to me to be composed of spores, etc."

2. This observation appears to me to be related to analogous facts already noted in Algeria in 1870. Dr. Nouffert, of Guelma, observed on himself and a member of his family who likewise had descended into a cellar, a series of large, red circles on the arms, the trunk, the neck, and the legs, irregularly circumscribed, hard, slightly rosy plaques of varied diameter, coming on suddenly accompanied by violent itching and insomnia and disappearing towards the seventh or eighth day. This phenomenon developed as a result of the descent into the cellar where there were stored twenty sacks of barley of good quality. Our confrere observed them to be covered with a reddish dust. The microscope demonstrated this dust to be exclusively formed of animaleules of great vivacity. Dr. Nouffert gave the name of "*Acarus urticans*" to this insect. The best means to destroy these parasites was boiling salt water sprinkled over them with a watering can. Since this time our distinguished confrere has had occasion in several instances to observe the same accidents among Europeans and natives. (*Bull. Soc. d. sc. d'Alger.*, 1875, 1st trimester.)

3. In 1881, Dr. Collard, physician of Gouraya, on coming into a room containing a quantity of barley intended for a mule, experienced on the legs a burning and itching, and found them covered with a redness in certain areas on which there developed isolated vesicles. There was a complete disappearance of the lesions after

painting them with strong carbolic acid. A neighboring lady had the same trouble. The mule was seized with cough and dyspnœa. Examination of the grain showed the presence of an acarus.

GEBER'S OBSERVATIONS. Professor Geber, of Klausenburg, published an article in the *Wiener medizinische Presse*, 1879, page 1362, on "An Inflammatory Process of the Skin Produced by Hitherto Undetermined Species of Mites." In the early days of June, a cargo of barley was received in sacks from Lower Hungary. Those unloading the cargo were seized a few minutes afterwards with a violent itching and burning to such an extent that they were with difficulty persuaded to continue the work. Powder obtained from shaking the barley was examined with the naked eye and under a magnifying glass without disclosing anything, but under the microscope, it was found to be almost exclusively made up of dead and living minute animals and their rudiments.

The living animals were of a long oval form, of yellowish-white color, and averaged 0.022 in length. They could only be seen with the naked eye when they were moving. Geber thoroughly described the parasite in detail and published drawings of the male and female; believing the mite to be hitherto undescribed, he gave it the name "*Chrithoptes monunguiculus*," indicating a one-clawed barley larva.

Geber used the infected barley powder on certain patients and noted eruptions of several grades of intensity. The simplest consisted of an outbreak of urticaria. Over a large area of surface were wheals either discrete, or confluent, in plaques reaching the size of the palm of the hand. There was a tendency to localization about the mouths of the follicles. After the subsidence of the first stormy outbreak, there remained lentil-seed-sized nodules (*lichen urticatus* of Hebra) covered with blood crusts. If the epidermis in the neighborhood of the follicles was carefully lifted off, the parasite could nearly always be found.

In severe cases, pin-head-sized papules, pustules and vesicles are present with urticarial lesions and an eczematous process. After about twenty-four hours, the wheals disappear and the eczema increases in intensity. In extensive eruptions, the itching is violent night and day, and there is anorexia and often a mild febrile movement for a day or two. The whole process usually lasts about five or six days.

In the severest grade of the eruption, there develops a pronounced dermatitis. The process is more rapid and the acme of the eruption is reached on the third or fourth day. The skin in

small or large areas becomes vivid red, sensitive and its temperature is distinctly raised. The surface is so tender that contact with the clothing or bed linen causes actual pain. The patients are restless, complain of burning pain, have great thirst and a temperature often of 38.5° C. After remaining stationary for a day or two longer, the eruption gradually disappears, followed by peeling and some pigmentation (Geber).

REFERENCE TO AN ERUPTIVE AFFECTION DUE TO CONTACT WITH STRAW BEDS IN MASSACHUSETTS IN 1831. Professor F. M. Webster, of the Bureau of Entomology, United States Department of Agriculture, has called my attention to the following reference which indicates that contact with straw beds occasioned a skin eruption three-quarters of a century ago in this country. It is possible that a mite similar to or identical with the one found by us may have been responsible. The following extracts are culled from *The Report of Insects Injurious to Vegetation*, by Thaddeus William Harris, M. D., Boston, Mass., edition of 1852.

" . . . In the years 1829 and 1830 several communications were published in the eighth volume of Fessenden's 'New England Farmer' respecting a disease of barley-straw, produced by the punctures of insects. . . . (page 437). Most of the stalks were found to have a number of small worms within them, near to the second joint and had become hardened in the part attacked, from the interruption of the circulation of the sap. . . . The worms or maggots were found by John M. Gourgas, Esq., of Weston, Mass., to be transformed to small flies, about the make and size of a small black ant, with wings, which were thought by some persons, to be the same as the Hessian flies. In the summer of 1831, myriads of these flies were found alive in straw beds in Gloucester; the straw having been taken from the fields the year before. An opinion at that time prevailed, that the troublesome humors, wherewith many persons were then afflicted, were occasioned by the bites of these flies; and it is stated that the straw beds in Lexington, being found to be infested with the same insects, were generally burnt" (page 438).

" About eight years ago, some of these insects, that had come from a straw bed in Cambridge were shown to me. They had proved very troublesome to children sleeping on the bed; their bites or stings being followed by considerable inflammation and irritation which lasted several days. So numerous were the insects that it was found necessary to empty the bed-tick and burn the straw. Since that

PLATE XIII.—To Illustrate Article by DR. J. F. SCHAMBERG.

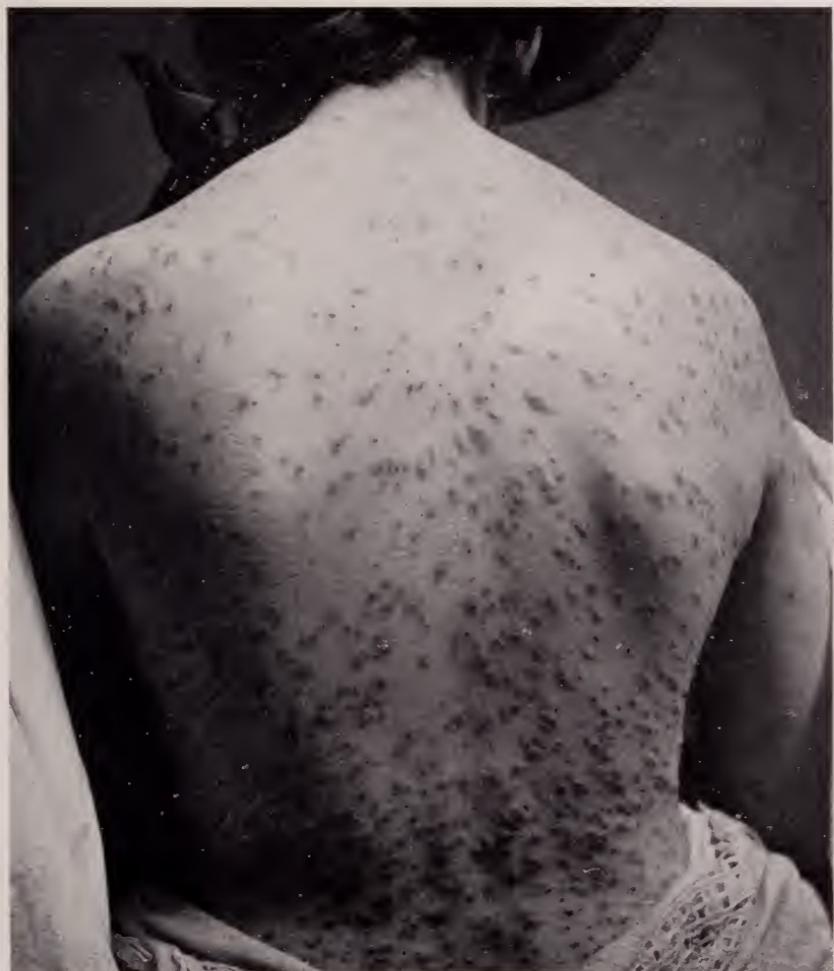


FIG. 1.
Urticaria-vesiculo-pustulosa Type.



FIG. 2.

Urticaria-vesiculo-pustulosa Type.



FIG. 3.

Erythema Multiforme Type.



FIG. 4.
Varicelloid Type.

PLATE XVII.—To Illustrate Article by DR. J. F. SCHAMBERG.



Fig. 5.

Microscopic section of a vesico-pustule upon an urticarial base. Exhibits dense cell mass made up of lymphocytes and polymorphonuclear leucocytes in the epidermis and in the corium.

PLATE XVIII.—To Illustrate Article by DR. J. F. SCHAMBERG.



FIG. 6.

Microscopic mite belonging to the genus *Pediculoides*, found in the straw of mattresses. Female mite; magnified about 300 diameters.



FIG. 7.

Adult of *Isosoma*. *Tritici* or joint-worm.
(Greatly magnified.)

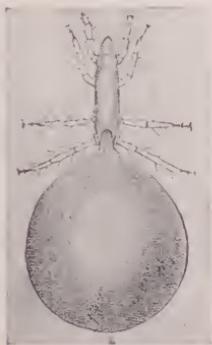


FIG. 8.

Pediculoides ventricosus: Pregnant female.

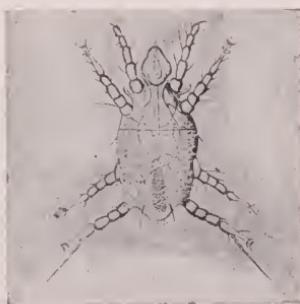


FIG. 9.

Schematic drawing of the *Pediculoides ventricosus*. (After Geber.)

PLATE XIX.—To Illustrate Article by DR. J. F. SCHAMBERG.

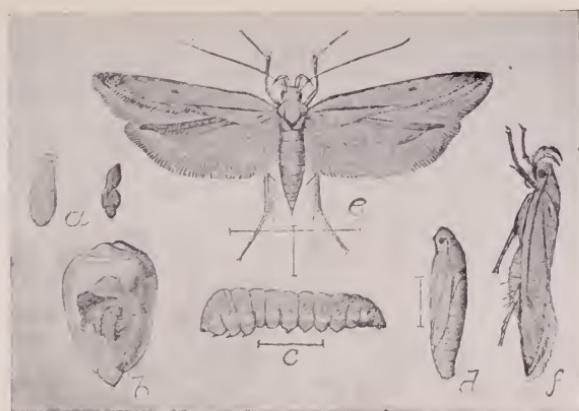


FIG. 10.

Grain moth (*Sitotroga cerealla*).

a, eggs; b, larva at work; c, larva, side view; d, pupa; e, moth; f, same, side view.

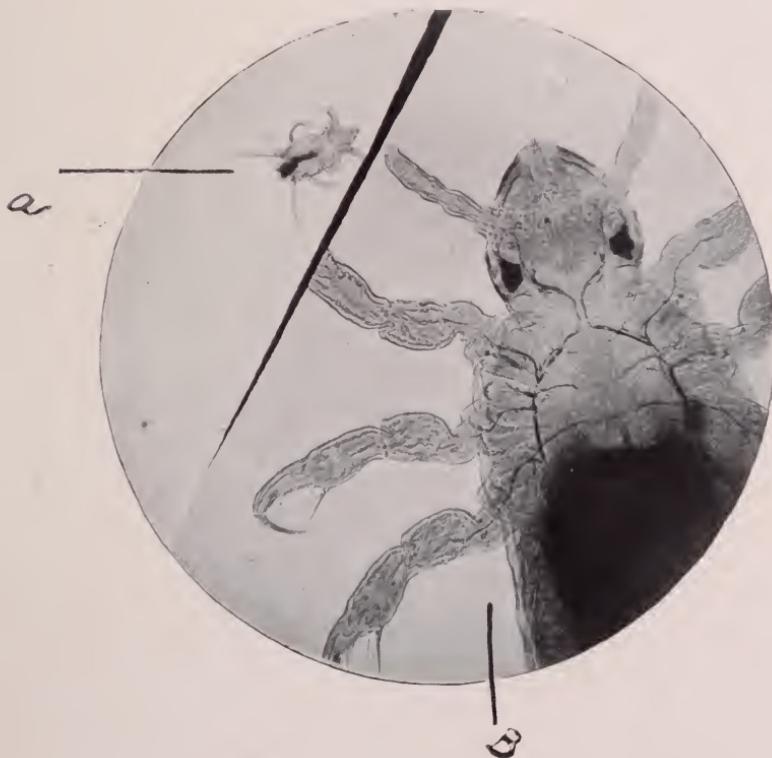


FIG. 11.

"Pediculoides" and *Pediculus pubis* compared in size. Each magnified about 75 diameters.

a, *Pediculoides ventricosus*; b, *Pediculus pubis*.

GRAIN ITCH.

time, I have heard nothing more either of the insects or of the disease in this part of the country" (page 440).

CHARACTERISTICS OF THE *PEDICULOIDES VENTRICOSUS*. In the book on Acarina or Mites, by Nathan Banks (1904), the pediculoides are classified as follows:

Class—Arachnida.

Order—Acarina or mites.

Superfamily—Sarcoptoidea.

Family—Tarsomnidæ.

Genus—Pediculoides.

The tarsomnidæ constitute a small family, but one of much biologic and economic importance.

The mouth parts are formed for sucking and the mandibles are needle-like. The abdomen of the pregnant female, which is at the nether end, swells enormously so that it is twenty to one hundred times the size of the rest of the mite. The eggs hatch out and pursue their entire development in the mother and are born as sexually mature mites.

The character of the pediculoides has been definitely fixed by Canestrini. According to Moniez, the pediculoides is characterized as follows:

(1). Normal and free rostrum. Legs of the fourth pair in the female, of the same dimensions as the others, terminated by two nails and a sucker; legs of the first pair, in the female, normal, terminated by a claw; legs of the fourth pair in the male, little different in dimensions from the others, terminated by a claw. Dorsal plaque segmented. Abdomen of the gravid female swells up into a sort of sphere.

The last anatomic characteristic is the most striking of the genus. The female is ovoviparous and gives birth to small octopods which can be fecundated immediately. It is possible that the pediculoides parasites upon man do not belong to a single species.

AGRICULTURAL IMPORTANCE OF THE *PEDICULOIDES*. As has been stated the pediculoides ventricosus is parasitic upon the larvæ of soft-bodied insects. This species of mite acquires considerable economic importance owing to the fact that the insect hosts are usually grain destroying parasites. The mite is inimical to the grain insects and therefore favorable to the preservation of the grain.

It will be recalled that Newport first found pediculoides ven-



tricosus upon the larvæ of a wasp. Professor Herrera of Mexico has made the effort to breed a Mexican species of the mite to kill the grubs of the cotton boll weevil.

While *pediculoides* is rather indiscriminate concerning its prey, it has been chiefly found in this country upon the *isosoma grande* (wheat-straw worm), the closely allied species, *Isosoma tritici* (joint worm), and the *Sitotroga cerealella* or *Angoumois* grain moth.

The wheat-straw worm is largely found in the wheat-growing sections west of the Mississippi River, while the joint worm is the chief enemy of wheat east of this waterway. These insects, when they prevail in great abundance, may cause great damage to the wheat crop. They may be roughly compared in appearance to "minute or large, shining black ants, with or without wings, their legs more or less bounded with yellow and having red eyes" (Webster). The *isosoma* passes the winter in the larval or pupal stage and reaches maturity early in April (Reeves).

According to Webster and Reeves ("The Wheat-Straw Worm," by F. M. Webster and Geo. I. Reeves: United States Department of Agriculture, Circular No. 106, 1909), in the extreme northwest United States, "Injury to wheat by the straw worm is induced by growing crops of winter wheat repeatedly upon the same ground; by leaving volunteer plants among the spring wheat, even at a distance from the wheat fields, and by growing spring wheat near winter wheat. . . . The remedy lies in avoiding these conditions by rotation of crops, clean early summer fallowing and the abandonment of spring wheat culture."

THE ANGOUMOIS GRAIN MOTH. "This moth received its name from the province of Angoumois, France, where it is known to have been injurious since the year 1736. From the seat of its supposed introduction in North Carolina and Virginia, this moth has spread to neighboring states in the South, where it does incalculable damage, and to the southern portions of the Northern States, where it is less injurious. Although not so widely distributed as the true grain weevils, it is rapidly increasing in range, and as it attacks grain in the field, even as far north as central Pennsylvania, as well as in the bin, is even a more serious pest in the localities in which it has become established than the weevils. It infests all the cereals, as well as buckwheat and the chick-pea, products of the tropics. It has been estimated that in six months, grain infested by this moth loses forty per cent. in weight and seventy-five per cent. of farinaceous matter."

"The adult insect resembles somewhat a clothes moth, for which, indeed, it is often mistaken. It is light, grayish-brown in color, more or less lined and spotted with black, and measures across the expanded fore-wings about half an inch. The hind-wings are bordered with a long, delicate fringe."

"The moth deposits its eggs in standing grain and in the bin, singly and in clusters of from twenty to thirty. The eggs are white when first laid, but soon turn red and hatch in from four to seven or more days, when the minute larvæ or caterpillars burrow into the kernels and feed on the starchy interior. A single larva inhabits a grain of the smaller cereals, but maize affords sustenance for two or more individuals."

"In three weeks or more, according to season, the caterpillar attains maturity, when it spins within the kernels a thin, silken cocoon and transforms to a pupa or chrysalis, the moth emerging a few days later, the entire period from egg to adult embracing in summer time about five weeks and in colder weather considerably longer" (F. H. Chittenden, Assistant Entomologist, United States Department of Agriculture, Farmer's Bulletin, No. 45, 1896).

Webster, of the Department of Agriculture, after examining our incriminated mattresses, was of the opinion that the insect host of the pediculoides in the straw was not the isosoma, but the *Sitotroga cerealella* or grain moth. In a letter received from him, he writes: "In going over the Bureau Correspondence since 1900, I find that in a great number of cases, the occurrence of this grain-infesting insect has been reported from the vicinity of Philadelphia"; and again, "The grain moth has been distinctly more prevalent in the Eastern States since 1901."

It will be recalled that the eruptive diseases caused by the pediculoides has been observed in Philadelphia only since 1901.

Whether or not the pediculoides invariably requires for its subsistence an animal host is not definitely known. Moniez believes that the mite is primarily parasitic upon grain and only secondarily upon insects.

He says: "It appears certain that the pediculoides can only undergo evolution if they have at their disposition a liquid nourishment: they must attach themselves either upon some vegetable, or in default of this, on some animal. In the case of wheat, they develop upon the larvæ of insects that live at the expense of the grain. When the nymphs are famished, they will throw themselves upon workmen carrying wheat and attack the skin."

"Amerling, in Bohemia, did not find the mites in company with parasitic insects; they can live on the grain."

"When the cereals become dry, the mites attack animal life. They are forced to quit the vegetable kingdom for the animal. In this respect they act as do the ixodes."

Webster, however, feels skeptical as to the ability of this particular pediculoides to sustain itself on grain. "I am still very doubtful about this mite being able to sustain itself on grain or any other vegetation. Very soon after the adult female begins to feed, it becomes so large and clumsy as to be absolutely helpless, and could not by any possibility inhabit the head of unripe grain."

"GRAIN ITCH" OR ACARO-DERMATITIS URTICARIOIDES. It is desirable that some appropriate name be applied to the disease above-described. In newspaper and journal articles it has been referred to as "barley itch," "straw disease," "mattress disease," etc. Inasmuch as the mite may inhabit most any of the cereals, a correct and convenient popular appellation would be "grain itch." As the affection is a dermatitis with hive-like lesions resulting from the invasion of the skin by an acarus, I would suggest the scientific name "acaro-dermatitis urticarioides."

Judging from the increasing prevalence of this affection during the past few years, it is not improbable that it will in the future be encountered more frequently and over more widely extended territory.

RECAPITULATION AND CONCLUSIONS.

1. An eruptive disorder, new to the physicians of this country, has, since 1901, been appearing in the vicinity of Philadelphia, and within recent years also in Indiana, Ohio, and other states.

2. The disease is characterized by a wide-spread urticarioid eruption accompanied by intense itching and commonly by mild fever and other systemic symptoms.

3. The characteristic cutaneous lesion is a wheal surmounted by a minute vesicle which rapidly becomes pustular.

4. Nearly all of the patients exhibit a slight leucocytosis and a moderate eosinophilia, and a certain proportion have albumin in the urine.

5. Microscopic examination of the cutaneous lesions demonstrates that the mite does not burrow into the skin as does the acarus of scabies. The pathological changes in the skin are characteristic of the lesions of urticaria.

6. The disease is due to contact with cereals or straw infested with the *Pediculoides ventricosus* or an allied species of mite.

7. Straw mattresses appear to give rise to the most severe and most persistent dermatitis for obvious reasons. Straw used for packing purposes, and sacks of wheat, barley, and other grains constitute additional sources of infection.

8. The *Pediculoides ventricosus* has always been found associated with and predatory upon other insects, particularly grain-destroying insects.

9. The *Pediculoides ventricosus* has an economic and agricultural importance because it tends to protect the grain crops by destroying the larvæ of the wheat-straw worm, the joint worm, and the grain moth.

10. Wherever "grain itch" is prevalent, it will probably be found that grain-destroying insects abound.

11. An identical or similar affection from contact with sacks of barley and wheat was noted by naturalists many years ago in France, Germany, Russia, and certain other European countries.

12. "Grain itch" is readily cured if the sufferer can avoid the source of infection.

Foot Note. At the moment of going to press there appears in the *Monatshefte für praktische Dermatologie*, Band 50, No. 1, January 1910, page 26, a brief reference to two articles on epidemic dermatitis due to the *Pediculoides ventricosus* in wheat, by A. Ducrey and by Sberna, read at the tenth meeting of the Italian Dermatological Association, held in Rome, December 1908.

SOCIETY TRANSACTIONS

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, September 28, 1909.

DR. SAMUEL SHERWELL, President.

Lupus Erythematosus. Presented by DR. KINGSBURY.

The patient was a brush-maker, twenty-three years of age, native born and in good health. Seven years ago the eruption appeared on the left lower eyelid, and a few months later the right lower lid became similarly affected. The lesions gradually increased in size and a scaly patch developed on the left side of the scalp. When presented, the lesions on the lids were slightly infiltrated and of a dark purplish-red color. There was some atrophic change in the centre and at the lower margin there were a few adherent scales. The left eyelid was entirely involved and all the hair follicles had been destroyed. The outer two-thirds of the right lid was affected, but only the lashes from the outer third were absent. The patch on the scalp was about two inches in diameter, and exhibited all the characteristic features of the disease as found in this location.

Acne Varioliformis. Presented by DR. KINGSBURY.

The patient was a large, healthy German, forty-three years of age. He had had the eruption for several months, and stated that at times it had been quite itchy. The lesions consisted of papules, small ulcerations and pigmented cicatrices, and were located on the forehead and throughout the scalp.

Epithelioma of the Upper Lip. Presented by DR. DADE.

The patient, who was sixty years of age, had been a hard smoker for many years. On the left upper lip there was a growth somewhat over a quarter of an inch in diameter, with an eighth of an inch elevation. The tumor, which bled occasionally, had been present for about eighteen months. On the same side of the lip, near the centre, was an area of leukoplakia, the centre of which had become epitheliomatous. There was also considerable leukoplakia of the inner surfaces of both lips. The rarity of epithelioma of the upper lip, together with the area of leukoplakia, which had undergone malignant degeneration, made the case of unusual interest. The lesions would be treated by the freezing process and the patient again presented at a future meeting of the Society.

Epithelioma of Unusual Extent. Presented by DR. TRIMBLE.

The patient, a man forty years of age, was referred to Dr. Trimble by Dr. Diamond. Eight years ago the patient noticed a small crusted papule behind the left ear. This had existed five years before he sought relief. A biopsy proved the tumor to be a basal cell epithelioma. An operation was advised and performed three years ago. This consisted of very extensive curettage and cauterization under general anaesthesia. The wound healed rapidly, after which the site of the tumor was given a number of X-ray exposures. The disease recurred after two years, mainly over the mastoid region and in the auditory canal.

Leprosy (Mixed Type). Presented by DR. G. H. FOX.

The patient, a man, was forty years of age and born in Russia. The family history was negative. He came to the United States fourteen years ago. The first symptoms of leprosy appeared two years ago. The case was one of the mixed type, of moderate severity. The face and hands were tawny and anaesthetic in patches. The eyebrows were thickened. There were a few tubercles on the face and extremities; the ulnar nerve was enlarged. The Wassermann reaction proved to be strongly positive; there was no history nor symptoms of syphilis.

Tubercular Leprosy. Presented by DR. G. H. FOX.

The patient was an Italian, male, twenty-seven years of age. He immigrated to the United States five years ago; symptoms of the disease were first noticed two years later. The case was an advanced one of the nodular type, the face being especially affected. Scattered among the nodules on the face were seen the pitted scars of variola. The ulnar nerve was enlarged, there were a few anaesthetic macules on the trunk. There were extensive ulcerations of the nose and mouth and of the throat. Leprosy bacilli had been found in large numbers.

Macular Leprosy. Presented by DR. G. H. FOX.

The patient was a girl nine years of age, born in Key West, Florida, of Russian parents. The family history was negative. The eruption was of the pure macular type, the lesions being present on the face, trunk and extremities; the ulnar nerve was enlarged and tender. The Wassermann reaction was strongly positive, but there was no history nor sign of syphilis.

Keratosis Pilaris and Secondary Syphilis. Presented by DR. G. H. FOX.

The patient, who was born in Germany, was a man twenty-eight years of age. There was an eruption on the external surfaces of the thighs and buttocks and to a slight extent upon the trunk, which had

existed for the past four years. The lesions had always been more prominent during the summer months. The patient also presented a healed chancre, of four months' duration, a general adenitis and a papular syphilide of the face. The Wassermann reaction was positive. The case was of interest from the fact that without the history, the keratosis pilaris might have been mistaken for a miliary papular syphilide.

Melanotic Sarcoma. Presented by DR. G. H. Fox.

The patient was a man, thirty-seven years of age and born in Russia. He had always enjoyed good health until four years ago when his present trouble began. This consisted, at first, of a black macule on the left ankle, which became elevated six months later. One year after the appearance of the lesion it was excised by a surgeon, immediately after which several small black spots appeared in the immediate neighborhood. At first these lesions were pin-head-sized, but later increased to the dimensions of a five-cent piece. When presented, there were a large number of various sized, elevated, round tumors, some of them flesh colored, while others were jet black. There were about one hundred lesions scattered about the ankle, a few on the leg, but none above the knee. The inguinal glands were not enlarged and the general health was excellent. The lesions had improved somewhat under X-radiation.

Morphœa. Presented by DR. G. H. Fox.

The patient was a woman, sixty-three years of age, born in the United States. The family history was negative. One year ago the present eruption appeared on the left wrist and attained its maximum size in four months. When presented, there was an oval, whitish, leathery patch one and one-half inches long and one inch wide, surrounded by a bluish border about a quarter of an inch in width. Three weeks ago she noticed the development, on her right wrist, of an ill-defined, whitish, somewhat rough, infiltrated patch, about one inch long. Both lesions, at times, would occasion a slight burning sensation.

Pigmentation Following Lichen Planus. Presented by DR. G. H. Fox.

The patient was a woman, thirty-four years of age and born in Austria. A year and a half ago an itchy, dry eruption appeared on the forehead and the backs of the forearms and hands. It lasted seven months and left a reticulated pigmentation of the forehead. Five months ago a second attack appeared which was similar, as far as the patient could remember, to the first. This attack involved the cheeks, chin and the backs of the hands. When presented, the lesions on the

face had nearly disappeared and had left brownish pigmented spots. There were still present a few typical lichen planus lesions.

Acne Varioliformis. Presented by DR. G. H. FOX.

The patient was a man, a German, eighty-two years of age. The family history was negative and the patient denied syphilis. The only point in the past history was that of a carbuncle thirty years ago. The present eruption began four months ago on the parietal region; new lesions gradually developed until they became scattered over the entire scalp. A few lesions, in various stages of evolution, were present on the forehead, chin and cheeks. There were a number of punctate scars. Itching was very severe.

Lupus Vulgaris Treated by the Finsen Light. Presented by DR. BULKLEY.

The patient was a young man, fifteen years of age. There had been a large oval patch on the right cheek, a small lesion on the left cheek, and a large circinate patch on the neck, just below the chin. All of the lesions were of a purplish color, elevated and associated with slight scaling. He had had four exposures, of one hour each, to the Finsen light, which had caused considerable reaction, but the lesions had considerably improved and were, at the time of presentation, on a level with the skin.

Acanthosis Nigricans. Presented by DR. BULKLEY.

The patient was a young girl, eleven years of age. She had been presented to the Society at a previous meeting and also at the Sixth International Dermatological Congress. The disease had begun at the age of six with verrucous patches most marked in front of the axillæ, on the extensor surfaces of the forearms and the inner aspects of the thighs. The peculiarity of the case was the irregular erythematous plaques, of various sizes and shapes, which resolved and recurred several times during the three years that the patient had been under observation. If not treated they would become covered with a dry, almost ichthyotic condition of the epidermis, which soon darkened. But with frequent alkaline baths and an emollient ointment they would remain as red patches. They not infrequently would assume fantastic shapes.

Chronic Papular Eczema of Unusual Character. Presented by DR. BULKLEY.

The patient was a girl fourteen years of age. For thirteen years she had had a papular eruption on the face and arms which had been very resistant to treatment. At times the eruption would yield to

various remedies then suddenly, without apparent cause, it would recur as violently as before. She had been in the hospital for a year or so and the diet was carefully watched. When presented, the entire face and parts of the neck and arms were thickly covered with hard papules which were associated with considerable redness and intense itching. The diagnosis of prurigo had been suggested but the legs had never been affected.

Dermatitis Herpetiformis. Presented by DR. BULKLEY.

The patient was a woman, fifty-six years of age. The skin affection began to develop four months ago, following an attack of rheumatism. Directly after taking a hot bath she had noticed several vesicles on the arms, which increased in size and number and appeared on various parts of the body except the face. When she entered the Skin and Cancer Hospital the body was covered with an eruption which was polymorphous in character. Examined closely, there were seen to be groups of papules, vesicles and bullæ with some raw surfaces; there was moderate itching. The bullæ arose from inflamed bases and were tense and hard, and did not rupture easily. They healed quickly after rupturing. The serum in the lesions remained clear.

Dermatitis Venenata Mistaken for Leprosy. Presented by DR. BULKLEY.

Dr. Bulkley presented the case of Mr. John R. Early who had been detained in quarantine, in Washington, D. C., as a leper, from August 21, 1908, to July 3, 1909, when he was released and entered the New York Skin and Cancer Hospital July 4, 1909. His only trouble had been a very severe dermatitis of the hands and arms, face and neck, and lower legs, caused by a very irritating occupation in a pulp mill in North Carolina. Dr. Bulkley exhibited the "black ash" as it was called, and the "caustic liquor" used, which he had had analyzed, the liquor being about a saturated solution of caustic potash, and the "ash" a powder of the same. Many men employed in the same branch of work had had their skin more or less similarly irritated and inflamed by these substances.

Arriving in Washington on August 18th, a family physician, puzzled about the case, referred it to the Health Department, because Mr. Early had jokingly remarked, "I wonder if I have leprosy;" and, as he had been in the Philippines for a year or two as a soldier, the diagnosis was accepted and he was quarantined until July 3rd, when he was shipped in a sealed baggage car to the New York Skin and Cancer Hospital.

When first arrested, a single small portion was taken from the inflamed skin of the forehead, without antiseptic precautions, and only

a "smear" from this was made, and in this were found a few acid-fast bacilli, "corresponding morphologically with those of leprosy;" there was only one slide made from this, which had been examined by Dr. Bulkley, and no sections were made of the skin. Nor was there ever any other microscopic examination made during the eight and one-half months, until on May 9th, when Dr. Bulkley took a piece of skin from the same location, and several portions from the legs; these were cut and stained and no bacilli were found by several pathologists who examined many sections. Later other portions of skin were excised, nine in all, and carefully examined by Dr. Wm. H. Welch, of Baltimore, and Dr. Wm. H. Park, of New York, who reported in writing, absolutely no trace of leprosy, nor of lepra bacilli.

The inflammatory eruption had mostly subsided, when Dr. Bulkley first saw him, the hands, arms and head being normal, except a slight eczematous redness on the forehead, which cleared up entirely, and promptly, under mild local treatment, and some pigmented stains on the lower legs, left after the inflammatory lesions in that situation had healed.

When he arrived at the hospital he was free from all trace of the eruption, except the stains on the lower legs. Dr. Bulkley had tested the sensibility with many pricks of a needle, often drawing blood, at each of his visits to Washington, and repeatedly in the hospital, without finding any marked anaesthesia.

Soon after entering the hospital he was practically discharged, living with his family, and reporting each week to the hospital for examination. No trace of eruption had developed, and when presented to the Society over a year after his incarceration, he was in perfect health.

The case presented little of real medical interest, except as an illustration of the necessity of making a very careful diagnosis in affections appearing in the skin.

PHILADELPHIA DERMATOLOGICAL SOCIETY.

The regular monthly meeting of the Philadelphia Dermatological Society was held at the Polyclinic Hospital, on October 19, 1909, at 8:30 o'clock.

Dr. M. B. HARTZELL presiding.

Multiple Ulcerations of the Neck, Tuberculous(?). Presented by DR. KNOWLES for DR. DAVIS.

The patient exhibited was a girl of thirteen years, somewhat anæ-

mie in appearance, but not at all emaciated. The family history was negative as to tuberculosis, and the patient had had no cough. Nine months ago the patient had been operated upon for an adenitis of the right side of the neck; since then six other operations have been performed to eradicate, if possible, all the glandular tissue in this location. The last operation occurred some months ago, and since then the present ulcerations have persisted. There were six ulcerations on the right side of the neck, extending from behind the ear to the junetion of the clavicle with the sternum; these lesions were from an inch to one-half inch in length, serpiginous, both in contour and in the grouping of the several ulcers, and were quite suggestive of gummata. The patient had numerous nits on the scalp hairs. There had been a marked improvement under the local application of ammoniated mercury ointment, fifteen grains to the ounce of vaseline.

Dr. Knowles said that the case was presented because of the marked resemblance the lesions bore to those of a patient, of practically the same age, exhibited to the Society some months ago. The former case had been operated upon several times before the correct diagnosis of syphilis had been made; the lesions healed completely in a few weeks under "mixed treatment." Dr. Davis had been under the impression that the pediculosis had not only prevented the healing of the lesions, but might have been the original cause of the glandular enlargement with the subsequent ulceration.

DR. HATZELL said he considered that the case belonged to the class described as scrofula. He did not believe that the lesions were syphilitic, and thought the nits could not have caused such a marked effect.

Lichen Planus and Arsenical Herpes Zoster(?). Presented by DR.
HARTZELL.

The patient presented was a slender, somewhat delicate-looking boy of eighteen years. The history was very clear; three months previously a papular eruption developed on the extremities, for which he consulted a physician, who ordered five drops of a certain medicine, three times daily; the number of drops being increased as the days went by. After taking the medicine for over two months, in large doses, the other eruption developed, for which he consulted Dr. Hartzell. There was a typical eruption of lichen planus on the dorsal surfaces of the hands, and on the flexor and extensor surfaces of the forearms, also on the dorsal surfaces of the feet, and the lower legs; lesions were sparsely scattered on the upper legs and upper arms, and a few were present on the trunk. The papules were mostly larger than usual, with some tendency to confluence, but the diagnosis was clear. On the left side of the upper part of the back, over the scapula, in the left axilla, and over the upper part of the left side of the chest, there was an extensive eruption of tense, pea-size vesicles, typical of herpes zoster. There was a tendency for

discrete vesicles to develop upon some of the larger, flat papules. The herpes zoster was seen by Dr. Hartzell on the third day after its appearance; at that time the pain was so severe that the patient had been unable to sleep.

DR. HARTZELL said that although the medicine that had been taken was unknown, the manner of administration would suggest Fowler's solution. He thought the zoster was undoubtedly arsenical in origin.

Carcinoma en Cuirasse. Presented by DR. HARTZELL.

The patient exhibited was a male of forty-three; the first nodule was noticed by the patient two and one-half years ago. The disease began in the nipple of the right breast. When the patient was first seen, there was an irregularly shaped, quadrilateral patch of pea-sized, firm tubercles, involving the right mamma; discrete about the borders and confluent in the centre. The skin between the nodules on the lower border of the patch was bluish. The disease involved the entire thickness of the skin, which was firm and board-like; finger-wide outshoots extended into the right axilla. The axillary glands on the right side were somewhat enlarged. The patient had been kept awake, on a few nights, by the pain. A biopsy was performed, which proved the clinical diagnosis.

Dr. Hartzell said the case was presented not only because of the rarity of the condition, but to show the wonderful curative effect of the X-rays; fully one-half of the nodules having entirely disappeared, and the remainder having been materially reduced in size. The X-rays had been used every five days for the last four months.

DR. SCHAMBERG referred to Pollitzer's case, of this character, in which infection occurred by the lymph channels. He asked if there was a proliferation of the lymph spaces.

Epithelioma (?). Presented by DR. SCHAMBERG.

A girl of seventeen years exhibited upon the left cheek a somewhat round, firm elevation of the skin, about five millimetres in diameter. The base of the growth sloped gradually to the level of the skin. The growth had a somewhat pearly appearance on the summit and on close scrutiny enlarged blood vessels were seen coursing over it. In the centre there was a follicular depression. Nothing could be made to exude from this depression upon digital pressure. The lesion first appeared three months ago.

Dr. Schamberg presented the case as one of epithelioma, and referred to the early age at which the growth had developed.

DR. HARTZELL said he considered that the case was one of molluscum contagiosum. He referred to a case that he had had some years previously, that resembled markedly the one under discussion, in a woman of sixty years, in which

the diagnosis of epithelioma had been made, but a biopsy proved that it was in reality molluscum contagiosum.

DR. STELWAGON said that although but one lesion was present, he considered the present case was molluscum contagiosum.

Syphilis and Lupus Erythematosus (?). Presented by DR. KNOWLES.

The patient exhibited was a stout, healthy-looking woman of thirty-seven years. Three years ago large rupial lesions appeared on the lower legs, which healed under internal medication. A few months before the appearance of the large lesions, according to the patient, there was a generalized eruption, the concomitant signs of syphilis being present. Two years ago, medicine having been taken for but a few weeks, rupial lesions developed upon the arms; these likewise disappearing under proper treatment. Since then there has been a more or less constant outbreak of lesions on the lower legs, the forearms, and on the face. The patient first came under observation two months ago, at which time there were papulo-tubercular lesions on both cheeks, on the right upper eyebrow, on the left side of the neck, on the forearms, and on the lower legs. On the forearms and the lower legs there were silver-dollar-size, and smaller, typical syphilitic scars. Two years ago a palm-size patch developed on the left cheek and extended across the bridge of the nose; after some months the patch disappeared spontaneously. Four months ago this same patch reappeared on the same location. The involved area was of the butterfly appearance, excepting that but one cheek was attacked. There was an unusual amount of infiltration in these lesions and also a marked amount of scaling and some crusting; the mouths of the glands were, however, noticeably patulous. The conchae of the ears were also involved. The biniodide of mercury, one and one-half grains, and seven and one-half grains of potassium iodide have been given, three times daily for the last two months, with the result that the papulo-tubercular lesions on the extremities and face have entirely disappeared, while the butterfly patch on the left cheek and nose has remained stationary, or if any change has occurred it has grown worse.

DR. HARTZELL said that the scars proved the diagnosis of syphilis, but if the other lesions were erythematous lupus they were atypical of the same.

DR. STELWAGON said that he thought all of the lesions were syphilitic in origin, and suggested larger doses of potassium iodide.

DR. SCHAMBERG said that he thought the lesions were probably those of erythematous lupus, which had been somewhat altered by the syphilitic soil.

Extensive Epithelioma of the Eyelid. Presented by DR. SCHAMBERG.

A man, aged sixty, had had for many years a mammilated growth involving the inner canthus of the eye and about one-half of the lower eyelid. The tumor consisted of purplish, coalescent, rounded elevations, very firm to the touch. The growth involved the mucous border

of the lid, and covered the caruncle of the eye. There had been an almost constant lachrymation because of obstruction of the duct. Under ether anaesthesia the entire mass was removed by the curette, and a pointed Paquelin cautery was then applied to the base, which extended on to the nasal bone. During the process of healing, radium of 1,000,000 activity, according to the German standard, covered with a lead filter, was placed over the affected area, for two periods of twenty-four hours each. The exhibitor was unable to state whether the radium had played any material rôle in the excellent result which had been obtained. A smooth healthy scar covered the greater part of the previously involved area.

Those present agreed that the result obtained was excellent.

Dermatitis Papillaris Capillitii. Presented by DR. KNOWLES for DR. DAVIS.

The patient presented was a male of thirty-four years, born in Italy, who gave a history of having had the condition for four months. There were fully fifty split-pea-sized papules on the posterior surface of the neck, extending up into the scalp. The lesions were deep-seated, and the usual keloidal condition was present, the papular element predominating.

The diagnosis was concurred in by those present.

Alopecia Areata in Two Brothers. Presented by DR. SCHAMBERG.

The patients were two boys of twelve and seven years of age respectively. The younger lad had extensive smooth, bald patches, particularly affecting the occipital region. The elder brother exhibited small, irregular patches, showing partial baldness on various portions of the scalp. The mother stated that the boys slept in the same bed. There were several other children in the same family free from the disease.

DR. SCHAMBERG referred to two brothers, exhibited last year with alopecia areata, who also occupied the same bed.

DR. STELWAGON said he considered that one of the patches in the elder boy resembled markedly tinea. He referred to the unusual opportunity he had had in treating cases of alopecia areata in the same family, three generations having been under his care.

Case for Diagnosis. Presented by DR. KNOWLES for DR. DAVIS.

The patient was a well-built male of forty-two years, who had had a very healthy life, excepting for the various cutaneous eruptions of the last few years. Nine months ago the patient was first seen, at which time there was a papular eruption present, with multiple chancres, two on the penis and one on the lower abdomen. One month ago the

patient developed a sparse, extremely pruritic eruption, chiefly on the back, and also on the trunk and extremities. The lesions consisted of flat, pinhead-sized, reddish, irregularly shaped papules, somewhat shiny; the possibility of acute lichen planus was considered. Because of the severe irritation of the skin by scratching, wheal-like lesions developed. Bromides were administered by Dr. Davis to lessen the itching so that the patient could sleep. One week after taking this preparation a furuncular-like eruption developed on the trunk, consisting of fully fifty lesions. At the time of presenting the case, only the latter lesions were present.

Dr. Knowles said that the case was presented to determine, if possible, the origin of the furuncular-like lesions; whether the bromides could have been causal.

DR. HARTZELL considered that the lesions were too inflammatory to have been caused by the ingestion of bromides.

Case for Diagnosis. Presented by DR. FINCK.

The patient was a somewhat delicate looking woman of twenty-three years. Four years ago the patient was operated upon, the outer side of the left wrist being incised; the reason for the operation had not been determined. In the winter following the operation the hand was noticeably bluish, in certain areas there was a slightly mottled appearance, the cold was felt intensely, and there was severe pain in this extremity. When the case was exhibited the hand was of a dusky hue, there was a scar at the outer side of the left wrist, where the incision had been made; on bending the fingers whitish areas appeared over the knuckles. There was a marked atrophy of the skin. The hand felt cold and hard. The circulation of the right hand was also impaired, the skin being somewhat cyanotic.

DR. HARTZELL said that probably the condition was caused by nerve injury, the trauma occurring at the time of the operation.

DR. SCHAMBERG considered that acro-asphyxia was very curious, as it not infrequently occurred in robust individuals.

Large Keloid of the Axilla. Presented by DR. SCHAMBERG.

A colored girl, fifteen years of age, presented in the left axilla a bologna-shaped tumor, about seven centimetres in length and two in width. Several years ago, the patient fell upon the edge of a chair and bruised the axilla, after which a large growth appeared. This was excised but the tumor returned. A second excision was performed later, but again the recurrence took place. The patient had been advised to have the growth again excised and then to have X-ray treatment instituted immediately afterward.

FRANK CROZER KNOWLES, M. D., *Reporter.*

MANHATTAN DERMATOLOGICAL SOCIETY

January, February and March, 1909.

CHARLES A. KINCH, M. D., President.

Extensive Lupus Erythematosus Discoides Cured with Carbon Dioxide Snow. Presented by DR. GOTTHEIL.

Miss E. L., twenty-five years of age. The disease began two years ago. The patch, which measured two by one inch, affected both sides of the nose, and reached up to the lower lid and inner canthus of the left eye. There was very little atrophy; the entire area was elevated, yellowish-pink in color, and a few adherent scales could be seen. Itching was marked. Green soap, sulphur, resorein, iodoform, mercury plasters, tar, and other external remedies had been employed, without other effect than irritating the lesion, which continued to spread. In December, 1906, the local employment of trichloracetic acid was begun, and was persisted in during the whole of 1907. The applications were made every two to four weeks. The immediate results were apparently very good; when the superficial white scars turned black and fell off the disease appeared to be eradicated. But inevitably new foci, in the form of raised, pinkish, itchy, slightly scaly and spreading patches would appear even in the centres of the treated areas, and there was a very slow but unmistakable peripheral extension.

In January, 1909, recourse was had to the solid carbon dioxide; and during that year the remedy was used some fourteen times. At each session two to five foci were treated; and the time of application varied from twenty-five to sixty seconds. It was necessary to go right up to the internal canthus above, on one side, and down to the ala nasi below. Application to the former situation caused no trouble in the eye save a slight conjunctivitis, the lid being carefully drawn down as far as possible, and the eyeball protected. The reaction was frequently very marked, large bullæ forming; they were allowed to heal without any dressing, and the scab usually fell off in less than two weeks, leaving a layer of smooth scar tissue behind. Especial attention was paid to the advancing margins, the applications being made at least a quarter of an inch beyond them. By November 14, 1908, no sign of diseased tissue could be seen; and though the patient still complained of some itching points, treatment, save for a bland sulphur-zinc ointment, was discontinued.

From that time until April 2, 1909, the itching had gradually disappeared, and there was no trace of diseased tissue in the affected area. The bridge and sides of the nose, and a very little of the cheek on both sides, was occupied by a smooth, soft, whitish scar, very slightly depressed, and extremely inconspicuous. Even on the lower

lid at the internal canthus the skin was merely a little white; there was absolutely no deformity. The result could be called perfect, in view of the fact that the natural end of the disease was atrophy and scarring.

Syphilitic Dactylitis in an Adult. Presented by DR. OCHS.

M. W., colored, thirty-two years of age, married, but has had no children. She gave a history of a possible chancre one year ago. She presented herself at the Harlem Hospital Dispensary on account of a sore leg. Examination showed a large exulcerated gumma (6 by $2\frac{1}{2}$ inches) on the outer side of the left leg. At the middle joint of the ring finger of the right hand was a hard fusiform swelling which involved the shaft of the bone as well as the second joint of that finger. The swelling was neither sensitive to the touch nor to pressure. The case was presented on account of its rarity in the adult. A radiograph of the finger confirmed the diagnosis.

Scleroderma and Sclerodactylia. Presented by DR. OCHS.

Mrs. K. V., fifty-six years of age; no history of syphilis. The skin around the mouth and of the cheeks appeared œdematos, firm and parchment-like. There was no inflammatory condition present, and the line of demarkation between healthy and diseased skin was not marked. The patient was unable to open her mouth to its full extent, nor could she extend her tongue. The fingers, especially those of the right hand, showed a gradual absorption of the distal end of the terminal phalanx. The condition was progressing rapidly, as it had been present but four months.

Results of X-Ray Treatment in Two Cases of Epithelioma of the Nose.

Presented by DR. GEYSER.

Case 1. Eighteen years ago the patient noticed a small, white scale on the end of his nose. An acid was applied, after which a scab formed and the lesion gradually spread. In 1897 this area was treated with a plaster, after which the affected region became larger. About this time the X-ray was used at the Presbyterian Hospital with good results, but the patient stopped treatment before a complete cure was accomplished. In a short time the disease manifested itself again and was treated at the Flower Hospital with radium, and from that time the lesion assumed a more active growth. Four months ago it extended from the eyes to the tip of the nose, eroding the lower parts of both sides. The Cornell tube was applied in the usual close contact method, the time ranging from fifteen to forty minutes during each sitting, which was twice weekly. There had been a decided improvement, the diseased area being entirely replaced with healthy granulation tissue.

Case 2. Female, fifty-six years of age, referred by Dr. Elliot for treatment for epithelioma of the nose. The lesion started thirteen

years ago as a persistent seab on the bridge of the nose, which caused no pain, but was very itchy and bled frequently. Four years ago it became very active and spread to both sides of the nose. The patient was treated in several dispensaries with as many different methods. At the Skin and Cancer Hospital a plaster was used which seemed to make matters worse. Four weeks ago the patient had her first X-ray treatment, and immediately began to improve. Since then she has had two sessions weekly, each of ten minutes' duration. When presented there was a clean healed surface, and six more treatments would, perhaps, prevent recurrence.

Lichen Planus of the Glans and Buccal Mucosa. Presented by DR. GOTTHEIL.

Harris S., thirty-four years of age. For the past six weeks the patient has had a slightly itchy eruption on the glans penis, for which he sought relief. On the upper surface of that organ was a circumscribed patch occupying about one-half its area, and running around in a narrow band on its under surface. The lesion was slightly elevated, tessellated, non-indurated, flat-topped and shiny, and of a purplish color. On the right side of the mucous membrane of the cheek was a closely aggregated group of greyish-white lesions. They were all very distinctly quadrilateral, just palpable as slightly increased thickenings of the mucosa. Their color was a little deeper than the rest of the mucous membrane, and their tops were dull-white in appearance. During the last few days a few isolated but characteristic lichen planus lesions have appeared on the wrists and forearms.

Onychomycosis. Presented by DR. KINGSBURY.

J. G., thirty-six years of age, motorman. About six weeks ago the patient noticed a diseased condition of the nail of the big toe of the right foot. Household remedies were used, but the nail was gradually destroyed, leaving a granulating bed. Two other toe nails became affected about three months ago, and recently several of the finger nails. The man had been out of work for several weeks owing to an infected toe, and, according to his statement, had been unable to receive any assistance from a benefit society, of which he was a member, because the examining physician reported that the disease of the nails was due to syphilis. The clinical appearance of the nails was typical of a mycotic affection, but no fungi were found in the scrapings. The Wassermann test was negative.

Sarcoma Cutis of the Idiopathic Multiple Hæmorrhagic (Kaposi), and Ordinary Types Combined. Presented by DR. GOTTHEIL.

T. K., fifty-five years of age, Russian. Eighteen months ago a

small nodule appeared at the middle of the inner surface of his right leg; bluish in color and not painful. He had been treated in various dispensaries for a long time with what was evidently curettage and partial excision, but the growth always returned, and larger than before. About a year ago a similar lesion appeared on the inner side of the ankle of the same foot. Four months ago a tumor of the same kind appeared on the toe, which soon became excoriated. Several lesions had recently appeared in the skin of the affected leg. The discoloration of the hands began about the same time as the tumors of the leg and foot. No single lesion had ever disappeared; all had grown continuously.

When presented, in April, 1909, the skin of the legs, feet and hands only was affected. The anterior surface of the right leg, from the junction of the upper and the middle third down to and including the foot, was studded with various sized lesions. The smallest were pin-head-sized, rounded, subcutaneous tumors, showing slightly bluish under the skin, and they were fairly soft. The larger ones projected more distinctly, and were pinkish in color. Still larger tumors formed hemispherical projections above the surface, and were blood red or even bluish in color. The epidermis over these lesions was extremely thin, and the enlarged blood vessels were plainly visible. On the back of the third toe, and involving the skin at its base and the back of the adjoining toes, was a prominent fungating and exulcerated mass, some two inches square, vividly red, and secreting foul pus. It was manifestly composed of a closely aggregated mass of nodules in a still more advanced stage than the isolated ones on the leg, and looked like a mass of very small marbles. Nodules similar to those on the leg were on the under surface of the great toe, and sole of the foot. The skin at the back of the foot was studded with nodules which were quite large. On the back of the foot, around the heel and ankle, were large, half-egg-sized tumor masses, some exulcerated, and numerous small nodules. On the back of the leg, at the lower part of its middle third, were large fungating masses, some two by one inch in size, and evidently developments of the original tumors.

The left leg showed a few depressed and purplish areas which looked as if they had been the sites of lesions, but the patient gave no distinct history of that having been the case. There were a few palpable nodules at the plantar arch; and that area was the seat of a diffuse bluish infiltration, similar to that found on the hands. The left sole was free, save for some keratosis.

On the back of the right hand was a diffuse bluish infiltration involving most of that area, and extending to and involving the fingers. This infiltration was soft, ill-defined at the margins, and permanent. No distinct nodules were visible there. On the left hand, the back of

the little finger presented the only area affected by this infiltration, but here there were apparently some nodules to be felt.

A microscopical examination was made by Dr. Satenstein. The striking feature of the sections made from a nodule was the presence of a fairly compact mass of various sized spindle cells, containing stained nuclei. In the meshes of these spindle cells many newly formed, thin-walled blood vessels were seen. No hæmorrhages were present in the nodule itself. Surrounding the nodule was a dense infiltration of small round cells. An examination of the bluish infiltration showed large irregular spaces filled with blood cells or their remains. The walls of these spaces appeared torn. Many ruptured vessels were plainly visible in the region of these hæmorrhages. Very fine pigment granules were to be seen scattered throughout the sections. The section from the fungating portions showed large and small spindle cell sarcoma.

The treatment had consisted of injections of Coley's mixed toxins every alternate day, beginning with eight drops and increasing a drop a dose. He had a marked reaction after each injection, the temperature rising to 102 to 103 degrees. Once it rose to 104 degrees. The patient received eleven injections, 108 minims of the fluid in all. Large, painful and persistent indurations followed the injections, though no apparent infection occurred. As no improvement was noted, the injections were discontinued.

REVIEW
of
DERMATOLOGY AND SYPHILIS

Under the charge of GEORGE M. MAC KEE, M. D.

**SYPHILIS OF THE SKIN AND MUCOUS MEMBRANES,
ATROPHIES, HYPERTROPHIES, MALIGNANT
AND BENIGN NEW GROWTHS.**

By UDO J. WILE, M. D.

A Peculiar Case of Nævus (Nævus Xanthelasmoides). O. MULLER,
Arch. f. Dermat. u. Syph., 1909, xvi, No. 2, p. 211.

Müller, writing from Fabry's clinic, describes a secondary finding in a "puella publica," who was being treated for gonorrhœa at the City Hospital. At the time of examination a curious brownish-yellow, slightly raised infiltration was noticed encircling both vagina and anus in a perfect figure of eight. The patient stated that the growth had existed for many years, possibly from birth, and that it had never caused her any subjective symptoms whatever. Objectively, states Müller, there was a striking resemblance to xanthoma, and this was his tentative diagnosis. Histological examination, however, showed the typical picture of a nævus. The peculiar yellow color which lead to the clinical diagnosis of xanthoma, the author can explain only by the fact that the nævus cell nests were situated in all the layers of the cutis, and, in addition to this, the hypertrophy of the epidermis may also have been a factor.

Fibroma Molluscum. F. S. LITTLEJOHN, *Texas State Jour. Med.*
Oct., 1909, p. 214.

The case here described is one of von Reeklinghausen's disease, which differed from the usual type in the unusual site of one of the tumors. The latter developed from the sole of the foot, and growing very rapidly reached an enormous size, totally displacing the foot itself, which projected from the upper and inner part of the tumor mass. It was deemed expedient to amputate the foot and growth together, and the combined weight of the two was fourteen and a half pounds. The patient was a man of fifty-eight years of age and the disease had begun when he was three years old, following immediately upon an

injury. The smaller tumors differed in no way from those ordinarily seen, but in addition to the one just described there was a second very large growth, extending from the left iliac crest, half way down the thigh. The microscopic examination confirmed the clinical diagnosis.

Nævus Lichenoides Albus Colli. J. FABRY, *Arch. f. Dermat. u. Syph.*, 1909, xcvi, No. 2, p. 205.

The case herein described was that of a man twenty-seven years old, who had a papular eruption extending for about 15 centimetres above the right clavicle. The individual lesions showed a remarkable likeness to the papules of lichen planus, except in their color, which was of a glistening snowy whiteness. By anamnesis, it was ascertained that the condition was of many years' standing, probably dating in fact, from birth. Subjective symptoms of any kind had never been present. The diagnosis of nævus was established only after biopsy, which showed nests of nævus cells grouped around cystically dilated sebaceous gland acini, and around the duets of the glands as well. The white color of the lesions suggested to the author, before the microscopic examination was made, that he was dealing with a case of white-spot disease, but his microscopic studies lead him to the belief, that the white color could readily be explained, by supposing that in this case the sebaceous glands, surrounded by nævus cells, acted as the light reflecting medium instead of the subcutaneous fatty tissue, which according to Kromayer acts in this capacity in the normal skin. Fabry believes his to be the first case of its kind to be described.

Lymphogranuloma. HUGO HECHT, *Arch. f. Dermat. u. Syph.*, 1909, xcvi, No. 1, p. 107.

Hecht presents two cases of obscure tumors of the skin which, after study, he groups under the class of "lymphogranulomatosis cutis." The first case was that of a man thirty-two years of age, who presented at first a tumor of the left side of the face, recurring after excision, and followed by multiple bluish-red tumors of the skin of the thorax. This case ended fatally within a few months. The blood was practically normal. Histologically the tumors consisted of deep-seated cell aggregations, made up principally of small lymphoid cells, numerous epithelioid cells, and only a few mast and plasma cells. In addition to the tumors, there was marked enlargement of the cervical and axillary glands.

The second case was that of a fifteen-year-old boy, who presented a large tumor of the left cheek, multiple tumors of the lymph glands, and a prurigo-like eruption. In this case, however, there was a leukocytosis of 64,000, (polymorphonuclear). Histologically the lymph glands showed an increase in the connective tissue, and large numbers

of large, oval polynuclear cells. This case the author believes to be identical with that described by Kreibich as "lymphogranuloma pruriginosum."

Grouping these two cases together, Hecht draws the following picture for their identification as a clinical entity: Multiple, firm, hard, freely moveable lymph gland tumors, a normal blood picture, or a simple leucocytosis but never a lymphocytosis, and skin changes consisting either of tumors and infiltrations of a tissue resembling granulation tissue, or skin lesions not identified histologically with the lymph gland changes, but resembling closely the lesions of prurigo. The diagnosis "lymphogranuloma" is suggested by the histological picture of the lymph glands, and skin tumors which demonstrate granulation tissue principally made up of cells of the small lymphocyte type.

Three Cases of Angiokeratoma Mibelli. O. SCHEUER, *Arch. f. Dermat. u. Syph.*, 1909, xcix, No. 2 and 3, p. 251.

Scheuer presents the results of his studies upon three cases of angiokeratoma observed in women. The first case showed the lesions on the dorsal surfaces of the toes of both feet following frost-bite. The other two cases were more interesting in that the patients were sisters, both of whom suffered with varicose veins since puberty; their mother also had varicosities and haemorrhoids, and the brothers suffered with varicocele. The angiokeratomata in these cases were situated on the dorsal surfaces of the fingers.

The histological study of the lesions showed in general, the structure described by previous investigators. Scheuer discusses the various theories concerning the aetiology of the disease, and expresses himself as believing that the development of the disease is due to an hereditary weakness of the capillaries, which in time leads to aeroparesis. Under the influence of freezing, the capillary walls lose more of their elasticity, giving rise to angiomatic dilatations in the papilla. The hyperkeratosis, he believes, can be regarded as a secondary protective mechanism, against possible bleeding from the cavernous capillary net-work.

Benign Hypertrophic Granuloma (Pseudo-Botryomycosis). JACQUET and BARRÉ, *Ann. de dermat. et de syph.*, 1909, x, No. 10, p. 574.

Under "granulome hypertrophique benin," Jacquet and Barré describe the clinical and histologic features of a tumor of the right cheek, following an injury. The patient was thrown from his horse and sustained contusions of the face and head. Eleven days after the accident a rapidly growing tumor appeared over the right malar eminence. This rapidly reached the size of a large nut; it was pedunculated and markedly inflammatory in character. A biopsy showed a

connective tissue tumor with inflammatory infiltration. Cultures from the tumor revealed the presence of staphylococci. No structures resembling the so-called botryomycetes could be found. The tumor rapidly disappeared under treatment with the Paquelin cautery. The authors call attention to the unusual site of such a tumor in their case, the exceptional size and the rapid evolution, the latter being one of the classical characteristics of this class of tumors. They insist on the impossibility of continuing the use of the name "botryomycosis" as applied to these tumors. The term "benign hypertrophic granuloma," suggested by Frederic and Kuttner, they consider a much more proper one for this affection.

Epithelioma Adenoides Cysticum (Brooke). K. J. SCHOPPER, *Arch. f. Dermat. u. Syph.*, 1909, xcvi, No. 2 and 3, p. 199.

This article consists of a histological and clinical study of a case of epithelioma adenoides cysticum occurring in Prof. Finger's Clinic. The patient, a woman of twenty-seven was admitted to the hospital suffering with a recent syphilis, and the lesion herein described was an accidental finding. The tumor was situated on the forehead over the left eyebrow; it was round, slightly elevated, of a yellowish-red color, measuring about a half-inch in size, and with a roughened warty surface. The patient stated that the growth had been present since her second year, and followed an injury. The tumor was excised and the histological examination showed proliferation of the surface epithelium in strands extending almost down to the subcutaneous tissue. These strands of epithelial tissue were found to undergo hyaline degeneration in their centres. Scattered here and there between the epithelial strands were "cystoid" structures evidently also of epidermal origin. The author prefers to call these structures "cystoid" rather than true cysts, as they are in no way connected with a gland, and are devoid of contents. This tumor clinically benign, but pathologically suggesting malignancy, corresponds according to the author, with the lesion described by Brooke, as epithelioma adenoides cysticum.

Immense Disseminated Nævi with Hemiplegia-Like Hypertrophy of the Entire Left Side, and Aortic Insufficiency. DANLOS, APERT and FLANDIN, *Bull. Soc. franc. de dermat. et de syph.*, 1909, No. 6, p. 215.

The three writers presented, before the French Dermatological Society, in Paris, the following very interesting case: The patient presented four interesting phenomena; (1) Inequality in development in the two halves of the body; (2) Multiple flat vascular nævi; (3) Dilated veins scattered over the entire body, and (4) Lividity of the lower part of the body which, when it was adjacent to the nævi, ren-

dered a sharp demarcation of the two processes impossible. In addition, there was an aortic insufficiency present.

After discussing the various headings under which this case could be placed, the authors finally concluded that it belonged to the category of cases described by Klippel and Trénaunay, as "nævus variqueux ostéo-hypertrophique," which group is characterized by extensive nævi, varices dating from birth or infancy, and an hypertrophy, particularly of the skeleton.

Leucoderma Syphiliticum. HANS VÖRNER, *Arch. f. Dermat. u. Syph.*, 1909, xcvi, No. 2, p. 203.

Vörner discusses the various current theories concerning the origin of syphilitic leucoderma. His own observations lead him to believe that the development of these lesions may be either spontaneous or secondary to other manifestations. The secondary type is the result of a previous macular lesion; on this point there is no discussion. More interesting, however, is the spontaneous origin. This type may begin either as minute light points on the neck of the patient, which very gradually enlarge until they reach hemp-seed or penny size, or much more often the lesions appear at once as spots of these sizes, which thus, in the beginning, may represent secondary efflorescence. Both the secondary and the spontaneous form may occur combined. Vörner's own theory as to the cause of the production of the leucoderma is that it is due to a peculiar condition of the skin, consisting in the limited ability to produce pigment.

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A CASE OF PEMPHIGUS VEGETANS, WITH SPECIAL REFERENCE TO THE CELLULAR ELEMENTS FOUND IN THE LESIONS *

By M. B. HARTZELL, M. D., Philadelphia.

THE majority of those who have studied the histopathology of pemphigus vegetans seem to have devoted their attention chiefly to the vegetations which form so striking and peculiar a feature of this disease, the bullæ apparently being regarded as presenting nothing very different from similar lesions seen in pemphigus vulgaris and other bullous affections. In the study of a case of this disease recently under my observation my attention was especially directed to the bullous lesions chiefly because these presented features which while not altogether new, were extremely interesting and somewhat different, at least in degree, from those commonly described as belonging to this variety of pemphigus.

George F., seventy-six years old, was admitted to the wards of the Philadelphia Hospital October 31st of last year for a disease of the skin presenting the following features: In the occipital region and about the corners of the mouth were small brownish, moderately thick crusts. Over the sternum, in the axillæ, over the abdomen, in the genito-crural region, upon the inner surfaces of the thighs and on the legs were numerous flat, rather flaccid blebs filled with turbid fluid, these lesions being largest and most numerous in the last situation. Besides the bullæ there were numerous crusts and excoriations upon the lower extremities, while upon the back were large areas denuded of epidermis, the sites of former blebs. The eruption showed no special arrangement except over the sternum, where it presented a well-marked circinate character, a large patch in this region having well-defined crescentic borders. In addition to these bullæ there were many condyloma-like lesions in the axillæ and genito-crural regions, some covered with a soft grayish layer

* Read before the 33d Annual Meeting of the American Dermatological Association, Philadelphia, June 3-5, 1909.

of macerated epidermis, others with red excoriated tops. The skin in the regions affected by the eruption was deeply pigmented, being a dark sepia brown. The back of the pharynx showed an extensive excoriation with some shreds of mucous membrane adherent at the margins, doubtless the remains of a bleb. The corners of the mouth were fissured and covered with a grayish exudate. The patient's general condition was decidedly feeble, and there was more or less hebetude so that it was extremely difficult to obtain a satisfactory history of the beginning of the affection. It was learned, however, after much questioning, that the eruption had first appeared upon the back of the head last July, spreading thence to the body and face, the exact order in which these regions were involved being uncertain. A striking symptom was frequent, slight, irregular, convulsive movements of the upper extremities lasting a minute or more, usually accompanied by a shrill outcry. These convulsive movements continued throughout the entire course of the disease. There was also a marked spastic condition of the adductors of the thighs, considerable force being necessary to separate them and when forcibly separated the patient cried out as if movement were painful. The superficial and deep reflexes were markedly increased.

For some weeks after his admission new blebs continued to appear, then there was a gradual remission in the eruption so that the number of lesions present at any one time was frequently not more than two or three. With the remission in the eruption the vegetative lesions in the axillæ and the groins began to undergo involution and finally disappeared entirely. In February of this year, however, signs of a new outbreak became manifest: new blebs and small pustules began to appear in the groins and on the inner surface of the thigh, and these were soon succeeded by new vegetative lesions. The wrists, the hands and the tops of the feet also showed a moderate number of small bullæ. The patient was now aroused with more or less difficulty, œdema of the lungs set in and death occurred on March 1st. It is greatly to be regretted that no differential blood count was made; this was directed to be done, but no record of it has been found.

A small flat and rather flaccid bleb with cloudy contents, thirty-six to forty-eight hours old, situated upon the ulnar side of the forearm, a short distance above the wrist joint, was excised for microscopic study. Under a low power it was at once apparent that the roof of the bleb was composed of the entire thickness of the epidermis which had been bodily torn off from the underlying

papillary layer of the corium. The cells of the epidermis showed little or no alteration, but here and there were small collections of leucocytes containing a moderate number of eosinophiles. The papillæ forming the bottom of the bleb were enormously elongated, standing up in the cavity like fingers. The contents of the bleb consisted almost entirely of small round cells with a trifling amount of fibrin. Upon staining with eosin and toludin blue these cells were found to be almost entirely of the eosinophilous type, only a very few polymorphonuclears being present. In addition to the eosinophiles there was a moderate number of large round cells quite uniform in size and appearance, lying here and there among the other cells, stained with eosin, containing a large cavity with a limiting membrane more deeply stained than the ring-like body of the cell. With but a single exception this cavity seemed to be empty: but in one instance it contained four nuclei deeply stained with the toludin blue. In the papillary layer and in the subpapillary portion of the corium there was a moderate cellular exudate, a very large proportion of the cells being eosinophiles.

The number of eosinophilous cells in the bleb, in the papillæ, and in the subpapillary part of the corium was so extraordinarily large that this feature seems to me especially deserving of attention. As is now well known, eosinophiles are to be found not only in pemphigus, but in other bullous affections, such as dermatitis herpetiformis, in the blood and in the lesions, and at first it was thought that this feature might prove more or less characteristic of such affections, but it was soon shown that it occurred in so many conditions, even in blebs artificially produced by the application of irritant substances to the skin, that it is no longer regarded as of much significance; and it is likely true that a moderate number of such cells in blebs and a moderate eosinophilia of the blood has no particular import, but it is also probably true that a very high percentage is an evidence of a more or less profound toxæmia.

It is with some diffidence that I refer especially to the large round cells above described, found in the contents of the bleb, for I am quite certain that most of those familiar with the histopathology of the skin will regard these as simply examples of the so-called "ballooned" epithelium, which occurs so frequently in zoster, varicella and other vesicular and bullous eruptions. I was inclined at first to so regard them, but careful and repeated examination has made me more than a little skeptical as to the correctness of this

view. There are a number of more or less valid objections to regarding them as degenerated epithelial cells derived from the rete mucosum: First, they are remarkably uniform in size and appearance, no transition forms being found; no evidence of "ballooning" was present in the cells of the epidermis forming the roof of the bleb; and, lastly, they are decidedly smaller than epithelial cells, being only about twice the diameter of the eosinophilous leucocytes. This last objection seems to me to be especially forceful. Although I have thus expressed doubt as to their epithelial character, I have no theory to offer as to their origin and nature.

A small, not very well-developed condyloma-like lesion was removed from the inner surface of the upper thigh during the latter weeks of the disease and examined microscopically. The most marked alteration found was a great increase in the thickness of the rete mucosum. The papillæ were very little increased in size and contained only a moderate number of polynuclear and mono-nuclear cells, together with a small number of "mastzellen," and a few badly stained plasma cells; but the most careful search failed to disclose a single eosinophile. The elevation of the lesion was due chiefly to a circumscribed acanthosis and very little to papillary enlargement. The lesions observed in the early stages of the attack, however, were much better developed than those which appeared later and would probably have shown greater alterations of the papillary layer of the corium.

To briefly sum up the essential features of this case: We have a bullous eruption beginning on the back of the head, gradually extending thence to the face, trunk and extremities, localized especially, but not exclusively, about the axillæ, the genito-crural regions and legs, showing a decided tendency in places to a ringed arrangement, attacking the mucous membrane of the pharynx and accompanied by papillomatous lesions in the groins and axillæ, the disappearance of the eruption being followed by extreme pigmentation. Microscopically it was found that the blebs, which were seated between the epidermis and the corium, were filled with eosinophiles, that the papillæ of the corium were greatly enlarged, especially in the longitudinal direction and that eosinophiles were present in unusual numbers in the papillæ and in the subpapillary part of the corium.

While this case lacked some of the features which are commonly found in pemphigus vegetans I think there can be no doubt that it was an example of this disease. It is true that there was none of

the eccentric spreading from a single lesion, except perhaps on the sternum upon which the French authors, Hallopeau and Leredde, and Unna lay so much stress, but it is doubtful if this is an essential feature. Kaposi has reported a case in which there was the usual localizations in the genito-crural and umbilical regions, the axillæ and upon the lips, while upon the rest of the body the eruption presented the features of pemphigus vulgaris. Indeed considerable variation from the ordinary type seems to have been noticed by a number of perfectly competent observers.

What is the relationship of pemphigus vulgaris to pemphigus vegetans? Is the latter anything more than a variant of the former? These are questions which it is difficult, if not impossible, to answer definitely in the present state of our knowledge. Hallopeau, Leredde and Unna regard pemphigus vegetans as a distinct disease, the last even refusing to call it by the name of pemphigus, proposing a name of his own, "*erythema bullosum vegetans*." Müller declares that it has not the slightest thing to do with pemphigus, and defines it as a "local infectious, autoinoculable dermatitis."

In this connection it may be interesting to briefly compare the sections made from this case with sections made from a bleb taken from a fatal case of pemphigus vulgaris under my observation during the past year. As it happened the bleb was situated in about the same region as the one examined in the case of pemphigus vegetans and was about the same age, namely twenty-four to thirty-six hours. In the lesions of pemphigus vulgaris the roof of the bleb, like that in the case of pemphigus vegetans, was composed of the entire thickness of the epidermis, there not being the slightest remnant of this structure left on the papillæ, but here the resemblance between the two lesions ceases. The contents of the bleb of pemphigus vulgaris were very largely fibrin in the meshes of which were entangled a small number of polymorphonuclear leucocytes with here and there a solitary eosinophile, the greater number of the latter being seen at the margin of the bleb lying among the cells of the epidermis. In no instance were any of the large round cells above referred to found. The papillary layer of the corium showed a moderate enlargement, but presented nothing comparable to the enormous elongation observed in the pemphigus vegetans, and while a few eosinophiles were present in the papillæ and in the corium their numbers were not only relatively, but actually very small. Are the differences observed between these two lesions to be regarded as essential or only accidental and therefore without special signifi-

cance? It seems to me that they indicate some real and important difference; but a trustworthy conclusion can rarely be drawn from a single case or even from a small number of cases, and I, therefore, present these observations simply for what they are worth, as a slight contribution to the study of an interesting and somewhat rare disease.

DISCUSSION.

DR. JAMES NEVINS HYDE said he had seen not more than eight cases of pemphigus vegetans, including the first reported American case, shortly after Dr. H. Radcliffe-Crocker had published his interesting report on the subject.

Dr. Hyde said that in the first four or five patients affected with this disease that he had seen the lesions were in the pubic region, and this feature was so marked that he thought all cases had a similar localization. It was, he believed, for that reason that so many of these cases had been assumed to be due to syphilis. In one of his cases the patient was a lad who was first thought to be suffering from a simple dermatitis of the scalp, but soon typical lesions of the pemphigus vegetans type developed. He was transferred to the Presbyterian Hospital, but he left shortly afterward, and the final result was unknown.

The speaker said he had been charged by his late colleague, Dr. Frank H. Montgomery, with having made the diagnosis of pemphigus vegetans in a medical student who recovered. Possibly that was so, but he could not recall having seen a case of recovery.

DR. GEORGE PERNET said he had seen a few cases of the kind described by Dr. Hartzell, which he thought came under the category of pemphigus vegetans. While one might object in a general way to the name pemphigus, still the case corresponded with his conceptions of pemphigus vegetans. He recalled one case which had been pronounced syphilitic, and in that instance he had had some clear fluid sent to him from one of the bullæ, in which he found the bacillus pyocyaneus—impure culture. The same organism had also been found in Dr. Winfield's case. Under the impression that these lesions were often of syphilitic origin, potassium iodide had been given by some, with very unpleasant effects. This drug was bad in any bullous condition. He referred to a patient seen at the University Hospital; an abnormal case of pemphigus vegetans, that being the only category in which it could be placed. The contents of the lesions and the blood were examined with absolutely negative results as regarded the presence of a micro-organism. That case ended fatally, but Dr. Pernet found nothing at necropsy.* Sections of the case, which were examined, showed that the epidermis was dissociated at the junction of the stratum lucidum and stratum corneum.**

* CROCKER: Diseases of the Skin, 1903, 3d ed., footnote, p. 272.

** PERNET: The Differential Diagnosis of Syphilitic and Non-Syphilitic Diseases of the Skin, Including Tropical Diseases, 1904, p. 277.

PLATE XX.—To Illustrate Article by DR. M. B. HARTZELL.



FIG. 1.

Section of a bleb.

a., eosinophile; *b.*, greatly enlarged papilla.

PLATE XXI.—To Illustrate Article by DR. M. B. HARTZELL.

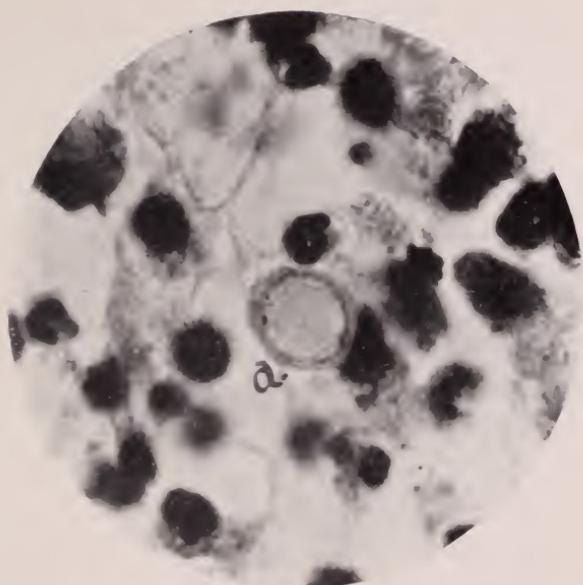


FIG. 2.
a, cell of undetermined nature.

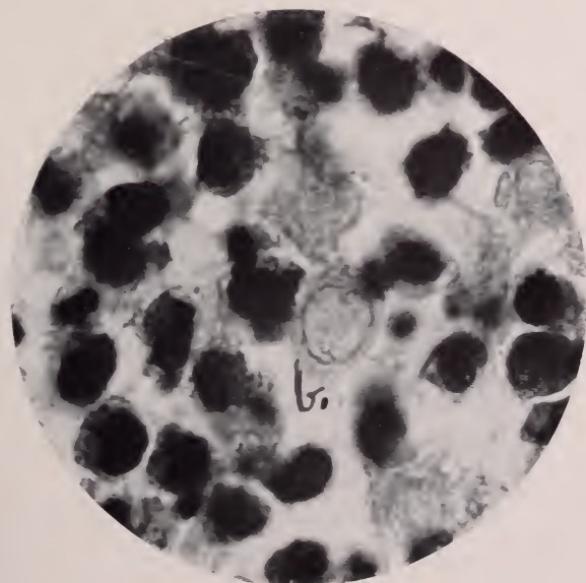


FIG. 3.
b, cell of undetermined nature.

PLATE XXII.—To Illustrate Article by DR. M. B. HARTZELL.

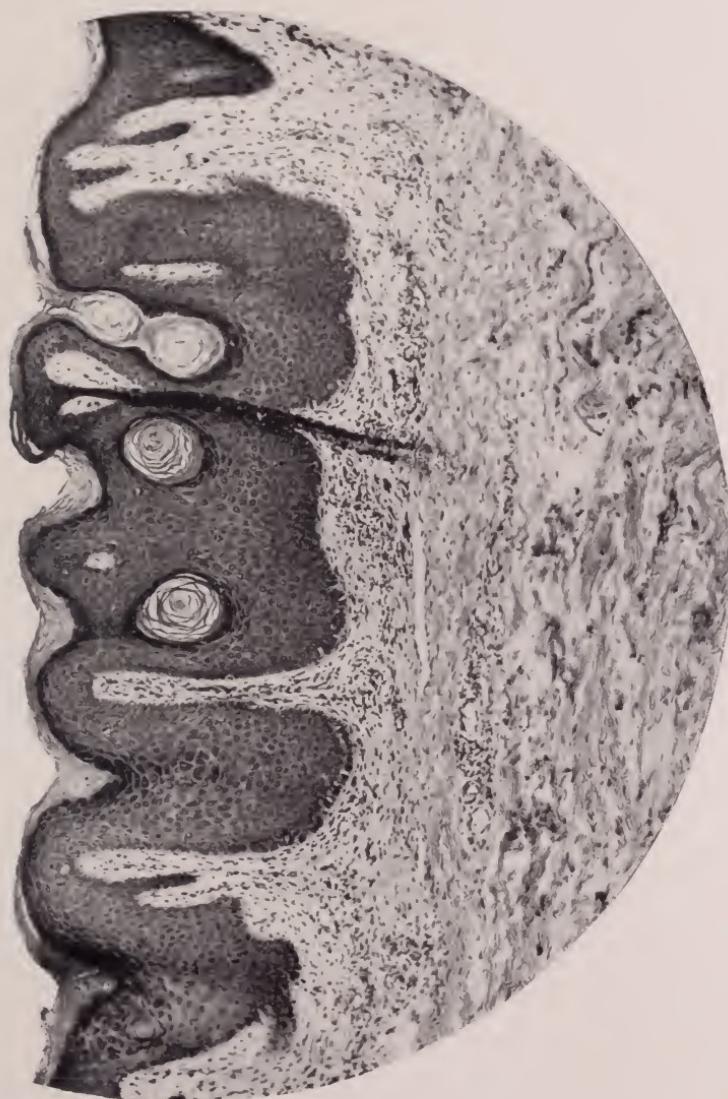


FIG. 4.
Section from condyloma-like lesion on the thigh.

Of course, Dr. Pernet said, such a case as Dr. Hartzell's was of very great interest. In his opinion pemphigus vegetans was dependent on a variety of aetiological factors. Such bullous eruptions were an indication of a very serious intoxication. A bacteriological examination of the contents of the bullæ and of the blood should never be neglected, as it might throw some light on the condition.

DR. LOUIS A. DUHRING said that while this disease was distinctly rare, it was now generally recognized, due to the observations of a number of writers during the past twenty years. Personally, he had seen only a few cases of pemphigus vegetans. One he had seen was in the person of an elderly lady in Reading. The diagnosis, up to that time, had not been made chiefly, perhaps, because the lesions were few in number, and when Dr. Duhring saw her, they were localized mainly about and in the mouth, which was their usual location. There were no bullæ at that time—only remnants of such lesions. The latter occurred, practically, in all cases, and were quite as characteristic as typical blebs. While he believed that the disease had absolutely nothing to do with syphilis, he thought the cachexia which occurred was comparable to that met with in some other diseases, notably syphilis. The plaques of denuded epidermis in and about the mouth were generally, if not always, sooner or later present. In the particular case he had referred to the condition warranted a grave prognosis, and the woman died within a few weeks from the time he first saw her. This was the usual ultimate termination of this disease.

As to the designation which should be given to this affection, Dr. Duhring said he did not think it mattered very much as to the name, although personally he favored the term pemphigus vegetans, chiefly because it had been in use for so long a time and was so well known. In some instances, as in the case he reported, although the blebs had been ill-formed or had more or less rapidly broken down, the remnants of them still remained, and a fatal issue could usually be looked for, even where comparatively few lesions existed. Two medical gentlemen who saw this case scarcely appreciated the gravity of the disease, and when he remarked that the woman would probably perish before long they were rather inclined to doubt such a prognosis. As to treatment, Dr. Duhring said that local applications were of no special avail in effecting a cure, and he had nothing but well-known remedies to suggest in the way of internal treatment. The entire nervous system was profoundly depressed. The speaker was able to recall another case of pemphigus vulgaris which he saw a few years ago in which the physician who sent for him thought there was no haste for the consultation, as he did not consider the patient seriously ill. Dr. Duhring saw the patient within six hours, but death had occurred a half hour before he arrived at the house.

DR. HARTZELL said he was unable to state what the patient's occupa-

tion was. He was in such a stuporous condition that nothing intelligent could be obtained by questioning him.

As to the histology of these lesions, there had been a good deal of discussion as to just where the bleb was situated, whether within the epidermis or beneath it. Personally, he believed that in most cases the effusion occurred from the papillary layer, but there were undoubtedly cases in which the effusion took place in the body of the epidermis.

Another interesting point was as to whether these cases were related to the disease described by Hallopeau and finally known as Neumann's disease. In Hallopeau's case there was at first a single lesion from which the eruption spread. That was the French idea of dermatitis vegetans.

A CASE OF PEMPHIGUS FOLIACEUS.

By H. H. HAZEN, M. D., Washington, D. C.

Clinical Professor of Dermatology, Howard University, Washington, D. C.
(From the Dermatological Department of the Johns Hopkins University.)

In a recent number of the *British Journal of Dermatology*, R. Cranston Low has reviewed the literature of pemphigus foliaceus, in addition to reporting several new cases. His account shows how fragmentary is the experimental study of this disease, and it is with the idea of supplementing his work that I report the following case. Dr. Gilchrist of the Johns Hopkins Hospital referred the case to me for study, and it was he who helped me at every turn, for which I express my thanks. To Dr. Dutcher, visiting physician at St. Agnes Hospital, I am indebted for the privilege of reporting the notes made while the patient was at that institution. Dr. Voegtlind directed me in the laboratory work.

The patient first came under my observation on July 10, 1907, at St. Agnes Hospital where the following notes were made by me:

S. M., thirty years of age, Hebrew, a merchant by occupation.

FAMILY HISTORY. His father, who is fifty-two years of age, is alive and well. His mother is also living and in good health. Three sisters have died from unknown diseases. One brother died of pneumonia at the age of three. There is no family history of heart, kidney, cancerous, nor skin trouble. The patient has been married for six years. His wife and two children are well. There have been no miscarriages.

PAST HISTORY. The patient did not have the ordinary diseases of childhood, nor has he had any of the acute infectious diseases, in fact he has had no illness at all until the present trouble. He has had headache only when constipated, no ear nor throat trouble, no chronic cough, no night sweats, no shortness of breath and no œdema. His appetite has been fair, digestion good, and only occasional attacks of constipation; no vomiting nor nausea, no piles, and no blood in the stools. His genito-urinary history is unimportant; he denies venereal disease. There has been no disturbance of his nervous or muscular systems. He has been in the habit of taking a glass of whisky before breakfast and smoking about five cigarettes a day. He also takes a little beer for lunch. His normal weight has ranged from 135 to 140 pounds.

PRESENT ILLNESS. Since the summer of 1903, four years ago, he has had a general pruritus, which was worse in summer. For about the same length of time he had a few yellow spots on the abdomen and chest which were relieved by bathing. In May, 1906, fourteen months ago, some "little sores" from 1 mm. to 1 cm. in size appeared upon his back. According to his story they became vesicular, ruptured early and formed "little ulcers." There was considerable itching. In a few weeks' time similar lesions began to appear on the face and arms, and there was considerable peeling off of the skin. At the end of three months the whole body was covered. About this time he was under the observation of Dr. Gilchrist and of Dr. Lord. All usual internal medication was given without avail. At the suggestion of Dr. Gilchrist X-ray treatment was applied to his extremities without any appreciable results. He was made to bathe frequently, and was given a vaccine made from the staphylococcus albus, but all without benefit. For the past year the man's condition has been about the same except that the disease is subject to exacerbations. In December, 1906, after having discontinued treatment for several months, with the exception of the use of a simple ointment, he was extremely ill, passed much blood by the rectum, lost the hair from both head and body, his skin eruption was much worse, and he lost considerable weight.

EXAMINATION shows the patient to be a fairly well-nourished man, weighing 135 pounds. He walks and sits with a marked kyphosis, says he cannot bear the weight of clothing upon him. His legs are bandaged from the ankles to the knees. The tongue is clean and moist, and can be protruded in the median line without tremor. The pupils are equal and react to light and accommodation. The

conjunctivæ are injected. The chest is symmetrical, well formed, and the respiratory movements are good and equal. The lungs are clear throughout to auscultation and percussion. The heart is not enlarged, the sounds are clear and of normal relative intensity. The abdomen is normal. The cervical glands are palpable. Covering the entire surface of the body and head, with the exception of the soles of the feet, and palms of hands, there is a scaly and scabby eruption. The scales are thin and white or gray and the scabs a dirty brown color, and easily rub off leaving a raw, moist surface, but no bleeding points. In the axillæ and groins the eruption is papular, arranged in striæ, red, slightly glistening, and resembling lichenification. The nails and hair are normal. The photograph shows his appearance at this time. A tentative diagnosis of pemphigus foliaceus had been made, although the face and scalp resembled a weeping eczema, being mostly covered with moist or dry scabs and the body a dermatitis exfoliativa in some parts and eczema rubrum in others.

The patient was placed in a continuous bath during the day; at night he slept in a bed. After a few days it was noted that the scales had decreased in number, but that there was a large number of fresh vesicles, which were flaccid and moist. The general condition was improved.

Two weeks later his general condition was still further improved. It was also noted that every few days his temperature would rise to 100° or 101° F., and a crop of fresh vesicles would appear. His urine was frequently examined. It was normal in amount and in specific gravity. Neither sugar, albumin, nor indican were present. His red blood cells were 5,800,000, his hæmoglobin 90%, and the white cells 11,900. A differential count of 550 cells stained with the Jenner stain gave the following results:

Large mononuclear	2.7%
Small mononuclear	41.8%
Transitional	1.2%
Polymorphonuclear	47.2%
Eosinophiles	5.8%
Mast cells .....	.9%
Myelocytes .....	.2%
Undetermined .....	.9%

While in the continuous bath he lost all of the scales and scabs, and it was seen that the primary eruption consisted of vesicles which

at once ruptured, remaining covered by a flaccid membrane-like epidermis. These vesicles frequently coalesced, but never in more than two directions, that is to say that they formed lines which might roughly be compared to chains of streptococci. The length of these lines was sometimes 10 cm., and the direction either straight, curved, or serpiginous. The size of the primary vesicle was 2 to 4 mm. while under my observation.

When it was seen that the primary lesion was a vesicle it was evident that the diagnosis lay between a dermatitis herpetiformis and pemphigus foliaceus. In making the latter diagnosis we relied upon the following points: Continuous chronicity, the lack of subjective constitutional involvement, the penetrating sickly odor, the extent of surface covered, the fact that the vesicles ruptured as soon as formed, and that they did not form groups, but coalesced in two directions only, and that they were covered by a flaccid membrane which when removed left a raw, moist surface, the slight tendency to healing, and the fact that he was never free from lesions.

On September 30, 1907, he left St. Agnes in an improved condition, the body was practically clear; the face not having been immersed, still presented an eczematous condition. In November of the same year he entered the Johns Hopkins Hospital. Upon entrance a few additional notes were made. His right epitrochlear gland was the size of a pea, the inguinal glands were large, hard and discrete, the knee reflex was very active, the stools showed no occult blood and no eggs of parasites, and the urine and sputum were negative. His red blood cells were 6,880,000, white blood cells 16,120, hæmoglobin 90%. A differential count of 500 cells showed the following:

Large mononuclear .....	.6%
Small mononuclear	15.4%
Transitional	1.8%
Polymorphonuclear	77.8%
Eosinophiles	2.8%
Myelocytes .....	.2%
Mast cells .....	.2%
Undetermined .....	.4%

We determined to study the man as carefully as possible, while he was in the hospital, first to investigate the toxicity of the sweat and also the bactericidal property of the blood. Unfortunately this work was never completed. Some work was done with reference to

his general metabolism, and the results seem worthy of reporting. He was put upon a "Folin" diet, which consists of:

Whole milk	500 cc.
Cream 16%	300 cc.
Eggs	450 gm.
Horlick's malted milk	200 gm.
Sugar	20 gm.
Water Q. S. ad	2 litres

This was given the patient each day. While the analyses of the food were never completed, yet frequent analyses of the same diet were made in the laboratory with the following average results:

N.	16.9
P ₂ O ₅	5.5
Cl.	6.26
SO ₃	3.76
CaO.	5.046
MgO.	0.3875

The patient was given charcoal by mouth and the intake and output controlled in the usual way. So far as completed the analyses gave the following figures:

Daily Amount	N.	PO ₃	NH ₃	Creatinin	Cl.	Ethereal Sul.
18-19 900 cc	2.268	.255	.749	.150	.72	.887
19-20 770 cc	4.312	1.170	1.250	.622	6.16	.319
20-21 590 cc	5.289	1.322	.496	.660	2.596	.673
21-22 500 cc	2.492	.760	.183	.358	1.300	.116
22-23 600 cc	.....	.941	.525	.654	1.320	.711
23-24 1470 cc	6.603	2.034	.875	1.044	3.381	.689
24-25 890 cc	.....	1.403	.656	.740	3.115	.575
25-26 785 cc	5.165	1.808	.747	.765	5.495	.514

Analyses of the stools were not completed.

The nitrogen was estimated by the Kjehdahl method; the ammonia and creatinin by Folin's method; the other estimates were done by the usual accurate laboratory methods.

It can be noticed that the total nitrogen output in the urine is extremely small and that the ammonia is high. The ethereal sulphates are high, supposedly an index of putrefaction.

Selenew, as quoted by Van Noorden, studied a case of pemphigus foliaceus and found no deficiency in the assimilation of nitrogen, and thought that the lessened excretion in the urine might be explained

by a loss through the serum of the bullæ and through the scales. Quinquaud, in exfoliating dermatitis, found a nitrogen loss of 4.249 per diem. In Van Noorden's laboratory the daily loss in scales has been found to be 5 gm. a day in pemphigus vegetans. Crocker reports a case in which the average output of urea was 12.14 gm., which is low, 20 gm. being the usual output on a poor diet. I feel that in our case the low nitrogen output can be explained by the great loss of serum and scales.

Normally the ammonia is but 3.5 to 5% of the total urinary nitrogen. In our case the ammonia constitutes 15% of the total urinary nitrogen. So far as is known ammonia is increased in the following conditions:

1. Ingestions of acid.
2. Acid intoxication.
3. Oxygen starvation.
4. Fever.
5. Liver disease.
6. Pernicious vomiting of pregnancy.
7. Carbohydrate starvation.

In our case only one of the conditions can be considered namely, acid intoxication. However, the clinical picture is not that of an acid intoxication, nor could diacetic acid be demonstrated in the urine. However, the possibility must be kept in mind.

The phosphates were only a trifle low. The chlorides were rather low. The ethereal sulphates are distinctly increased, supposedly a sign of increased fermentation in the intestines.

To sum up these studies the total nitrogen is markedly decreased, and the ammonia markedly increased, and the ethereal sulphates increased.

Bacteriological examination showed a pure growth of *bacillus pyocyaneus* and *staphylococcus aureus* from an unruptured vesicle.

A vesicle was excised and studied histologically with the following results:

1. The horny layer lacking.
2. The rete is œdematos, and infiltrated with polymorphonuclears, epithelioid cells, and a few plasma and round cells. The rete over the papillæ is thinned as in weeping eczema.
3. The papillæ are elongated and œdematos, and contain some epithelioid cells around the blood vessels. There are no eosinophiles in the blood vessels of the papillæ. Nuclear fragmentation is present.
4. There is a collection of epithelioid and small round cells around the blood vessels of the corium.
5. The walls of the blood vessels are not thickened. This observation fails to confirm Joseph's work.

6. The arrector pili muscles are normal.

7. There is some infiltration around the sweat glands, some infiltration of the epithelioid and round cells along the sweat ducts.

8. There is marked infiltration of polymorphonuclears, small mononuclears, plasma cells and epithelioid cells where the sweat duct enters the rete and in upper part of the corium around the duct.

9. Where the hair follicle dips down there is much œdema and polymorphonuclear fragmentation.

10. The sweat glands are not atrophied.

Unfortunately an elastic tissue stain was not made.

In March, 1909, the patient again came under my observation. In the interval he had been spending all of his days in a continuous bath at home. His general condition was still good, but his arms and legs were much thinner than formerly; this change being apparently due to a disappearance of the subcutaneous fat. The abdominal fat, however, was still well developed, his gums were ulcerated and spongy, there were no vesicles in the mouth, there were a few vesicles in the palms of the hands, some of which contained a purulent fluid. Investigation of the urine gave the following results:

Daily amount less than 1000 c.c.; color, yellow, clear; reaction, acid; Sp. Gr. 1028; no albumin, no diazo reaction, no sugar, no diacetic acid. Indican was present in very large amounts by the "Sahli" test. The total urea was 10 gm.

A culture from an unopened purulent vesicle gave a pure culture of *staphylococcus aureus*. A culture from a vesicle containing clear serum showed the *pyocyaneus* only. The urine gave a pure culture of *bacillus pyocyaneus*. Cultures from various portions of the skin also gave pure cultures of *bacillus pyocyaneus*. It was extremely difficult to obtain a blood culture on account of the nervous condition of the patient, because of his surroundings, and because of the universal involvement of the skin. Finally the skin was swabbed with pure carbolic acid; this was then removed with alcohol and blood drawn through the area. This also gave a pure culture of *bacillus pyocyaneus*, but I confess that I feel that there is a bare possibility of error here, so slight, however, as to be practically negligible. Two cultures were made from the blood. *Bacillus pyocyaneus* was not isolated from the stools, though two attempts were made.

I also investigated the blood as to its agglutinating properties upon the *pyocyaneus* organism. A 1 to 50 dilution, at the end of one hour showed that the bacilli had lost their motility, but had failed to clump. The macroscopic method also failed to show any

definite agglutination. The results with normal blood were practically the same.

The patient was treated with autogenous vaccines in doses ranging from 10,000,000 to 100,000,000. Upon the first injection he became ill with marked malaise and headache, with pain in the limbs and back, with redness and swelling at the site of inoculation, and with the outbreak of a fresh crop of vesicles. In fact this reaction was similar to a typical tuberculin reaction. Each injection caused more blisters and malaise, so the treatment was stopped. In view of Crowe's work, large doses of urotropin were given, but without effect.

There are a number of types of pemphigus: 1. Acute septic pemphigus and pemphigus neonatorum. 2. Chronic pemphigus. 3. Pemphigus vegetans. 4. Pemphigus foliaceus.

Pemphigus foliaceus was first described by Cazenave in 1844. In his text-book, the eruption is described as follows: "A form which constitutes a confluent eruption, appearing sometimes at intervals and sometimes continuously, attacking the whole surface of the body. The bullæ are flattened and contain an opaque serum, which hardly raises the epidermis and soon hardens into yellowish, scabby lamellæ. The eruptions succeed each other so rapidly that the epidermis, not being in a condition to form new bullæ, the disease is reduced to the excretion of a liquid, which dries under the form of large scales. The patient exhales, from every part of the surface, a dead and sickening odor, and is soon attacked with oedema, diarrhoea, serous effusion, or chronic enteritis, and often dies." It would seem impossible to improve upon this clinical description.

It is evident that the disease is a bullous one. Now what may cause such superficial bullæ? There are the following possibilities:

1. Local external infection, as impetigo.
2. Septicæmia, as acute septic pemphigus.
3. Ganglionic degeneration, as herpes zoster.
4. The disturbed functioning of some gland, a gross error in metabolism, as diabetes.
5. An error in intermediary metabolism, as gout.
6. Absorption from the intestines of abnormal products of digestion.
7. Bacterial or food toxin absorbed from the digestive tract.

We know that even the early blebs contain the *pyocyanus* and later, *staphylococcus aureus*. The increase in the ratio of the ammonia to the total nitrogen is important. The most plausible explanation would seem to be an acid intoxication, and in view of the bacteriological finding, probably an intoxication due to the presence

of a subacute infection. In view of the findings of Winfield, in pemphigus vegetans, and of Pernet, and Petges, and Bichelonne, we can say that pemphigus vulgaris, vegetans and foliaceus are all probably due to a systemic infection with bacillus pyocyaneus. Hübener has shown that this organism may set up a fatal septicaemia.

SUMMARY.

1. The bacillus pyocyaneus was demonstrated in circulating blood, urine, and non-purulent vesicles, and over the entire cutaneous surface. This organism is probably the cause of the disease. There is, of course, the possibility that it is a secondary invader.

2. Staphylococcus aureus is a secondary invader, causing the vesicles to become purulent.

3. The nitrogen output is low, owing to the loss in the scales and serum.

4. The relative ammonia output is very high, probably due to an acid intoxication caused by the infection.

5. The ethereal sulphates and the indican in the urine are increased, both supposedly indices of intestinal putrefaction.

6. There is a leucocytosis with varying differential counts.

7. The older histological findings are confirmed.

8. The continuous bath has kept the patient in much better condition than any other treatment.

9. The agglutinating properties of the patient's serum were found negative toward the bacillus pyocyaneus.

10. After injection of a vaccine made from the bacillus pyocyaneus, the patient gave a violent reaction, comparable to the reaction after the injection of tuberculin. Probably smaller doses might be more beneficial. This is in favor of the pyocyaneus theory.

11. All drugs that we tried are useless.

12. There is need of a further investigation of the entire group of pemphigus eruptions, along the lines of modern research; it is not sufficient to merely employ observation. The following studies should be made: 1. General metabolism. 2. Toxicity of sweat. 3. Bacteriological examination of blood, bullæ, urine, faeces. 4. Agglutinating power of blood.

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PLATE XXIII.—To Illustrate Article by Dr. H. H. HAZEN.



FIG. 1.

PLATE XXIV.—To Illustrate Article by Dr. H. H. HAZEN.



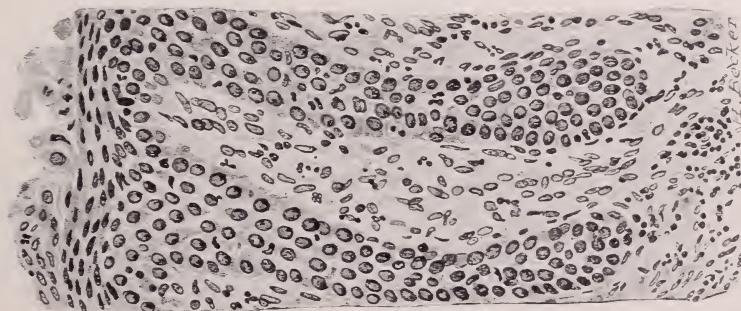
FIG. 2.

PLATE XXV.—To Illustrate Article by DR. H. H. HAZEN.

FIG. 3.



FIG. 4.



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DESCRIPTION OF PLATES.

1. Appearance of patient when first seen.
 2. Appearance of patient in continuous bath.
 3. Section of a vesicle that ruptured when excised.
 4. Enlargement of figure 3.
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REPORT OF A CASE OF PELLAGRA IN NEW JERSEY.*

By E. D. NEWMAN, M. D., Newark, N. J.

Dermatologist to the St. James and German Hospitals, Newark, N. J.

I DESIRE to add one more to the reported cases of pellagra. When this case was first under my observation, I was unable to make a diagnosis, but when I learned from the mother, of the death of the boy, and of his symptoms subsequent to the time he passed from my observation, I came to the conclusion that this was an undoubted case of pellagra.

I forwarded the history of the patient with photographs to Dr. C. H. Lavinder, of the Public Health and Marine Hospital Service, to whom we are indebted for much information regarding pellagra, and by his permission I quote his letter in full:

DR. E. D. NEWMAN,

Dear Doctor:—Your very interesting case-history and photographs received this morning.

Of course, a diagnosis made in this way leaves much to be desired from the point of accuracy, but after carefully going over

* Case reported at the Physician's Club, Newark, N. J., November, 12, 1909.

the matter it seems to me that your suspicion of pellagra in this case is very probably correct.

The skin lesions seem in some respects to have followed an unusual course, but the rest of the clinical picture agrees with pellagra in all of its essential features. On the whole, from the evidence submitted, I am very much inclined to think the boy was a pellagrin.

I should be pleased to hear of anything of further interest.

The disease has not as yet, I think, been reported from New Jersey.

Very truly yours,

C. H. LAVINDER.

HISTORY. The boy, who was ten years of age, was brought to my office on August 11, 1908. On his way thereto, he was compelled to rest a number of times, complaining of weakness; when photographing him it was necessary to have some one hold his head and hands, the weakness and shakiness being pronounced.

The patient was born in New Mexico, and lived there for seven years. There was no history of eating in excess of Indian corn or maize, although his mother informed me that the natives are large users of Indian corn.

The boy's father died of pneumonia, one sister of diphtheria. His mother and brother are at present in good health.

In February, 1908, the boy fell from a rocking-chair, striking the back of his head against a stove.

In March, 1908, black rings were first noticed around the eyes, then a patch across the nose, gradually extending over the rest of the face. His hands were first reddened, then peeled, then became thickened and fissured. The lesions had entirely disappeared by April 11, 1908.

On April 25, 1908, the eruption began practically in the same manner, followed the same distribution and order, and lasted until June 15, 1908.

The third attack appeared on July 15, 1908, following the mode of previous ones.

EXAMINATION. The patient was a boy of ordinary size and appearance for his age. Over the entire face and forehead, with labial borders free, were sharply marginated lesions with red borders, greasy-gray in color, with numerous striations; on the backs of the hands and the wrists were lesions of the same character with exag-



FIG. 1.



FIG. 2.

gerated furrows, and inky-black in color; the palms were entirely free. Small patches were situated on each elbow and on each knee; three were found along the spinal column, one in the gluteal cleft, and one on each foot back of the big toe.

He complained of weak spells, and tired easily. He had a slouching gait, cried easily and was very nervous. Diarrhoea was a more or less constant symptom with as many as fourteen stools in twenty-four hours.

EXAMINATION OF URINE. Sp. Gr. 1022; reaction, acid; there was no albumin nor sugar. Indican was present in excess.

He was seen only once by Dr. Beling, Neurologist to the City and St. Michael's Hospitals, whose examination revealed nothing except exaggerated knee reflexes and a disposition to "tantrums." The boy was sent to the hospital for observation, where he remained twenty-six days, his temperature running from normal to 100° F., pulse 80 to 120. He had two attacks of vomiting. Constipation and diarrhoea alternated with involuntary faecal discharges on two occasions. He fainted once. The black color of the lesions seemed to have lightened.

From the mother I learned that the boy had died on August 9, 1909, and that one month after leaving the hospital his skin lesions had cleared up. At this time, however, he began to lose the power of his legs, so that he was unable to walk; and he had muscular spasms of the upper extremities, which were worse in the morning. Twitching in the legs and itching in the soles of the feet were also complained of. There were no headaches or insomnia. Diarrhoea was present when the skin showed changes. Toward the last there was loss of power in the hands, and the fingers were flexed on the palms. He lost much in weight.

The last attack began in May or June, 1909, following exposure to the sun's rays.

SOCIETY TRANSACTIONS

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, October 26, 1909.

DR. SAMUEL SHERWELL, President.

Six Patients Showing Result of Treatment for Epithelioma, in and Around the Orbit, also Affecting the Sclerotic Mucous Membrane and Tumour Oculi Generally, with Demonstration of Photographs. Presented by DR. SHERWELL.

Dr. Sherwell said his idea in presenting this particular group of cases was to show the good results which could be obtained with the application of what had been his favorite method for the last thirty-five years, namely deep and thorough curettage, and equally thorough use of nitrate of mercury applications even in these dangerous situations. Some of the patients had been given general, while others had received only local anaesthesia at the time of operation. He feared that possibly some of the members might have considered him, in the past, as too optimistic or sanguine, but the results, he thought, spoke well for the method. Naturally he could not bring a very great number of cases at one time as their abodes were so widely distributed. The number of similar cases operated on would amount to several hundred, and returns or relapses were not common. Great care was necessary in these situations in order to preserve the eyeball itself, but the technique was sufficiently simple.

Dr. Steers who ordinarily assisted him was present and could testify as to the efficacy of the method. Although the inflammatory reaction was always severe and might cause alarm, he had never had occasion to regret the extensive curettage and acid application, but very frequently he had regretted that it had not been more drastic.

Dr. WINFIELD said that it was a very remarkable collection of cases. He had seen some of them before, and thought that Dr. Sherwell was to be congratulated on the results he had obtained. Having been taught by Dr. Sherwell he, himself, had followed much the same plan of treatment and had proved the method very efficacious.

Dr. FORDYCE said that he thought the use of caustics was very much an individual matter and that it depended a good deal upon what one was in the habit of using. He himself used chloride of zinc and trichloracetic acid with excellent results. He congratulated Dr. Sherwell upon the good results he obtained about the eyelids where great care was required in the use of these agents.

Dr. G. H. Fox said that the good result in these cases was most noticeable, when one considered that the unfortunate situation of the growth around the

eye made the treatment more difficult. Twenty-five years ago he had used the acid nitrate of mercury quite extensively, in comparison with other acids, and decided that it was the best. Recently he had resumed the use of acid nitrate of mercury, with most satisfactory results. Dr. Robinson had mentioned the use of this application in xanthoma. He himself had always used electrolysis, and had been satisfied with its effect, but now he could report some excellent results from the use of acid nitrate of mercury, not only in xanthoma but in erythematous lupus, and in one case of lupus vulgaris. It might be well to take up again some of the old remedies, like green soap, which have been so long discarded.

Dr. Fox said that he had discontinued the use of nitrate of silver after curettage, having found pure carbolic acid to be superior. While nitrate of mercury was not so painful as other caustics, and its action could be controlled very nicely, he had found, in a number of cases, that by first using a little carbolic acid and then the nitrate of mercury, much less pain was caused.

Dr. WHITEHOUSE said there was no doubt about the beautiful results obtained in these cases, but from what Dr. Sherwell had said on former occasions about his manner of curettage, he had wondered how much of the result could be attributed to the vigorous curettage, independently of the caustic employed. Dr. Whitehouse had not used acid nitrate of mercury, but he thought that epitheliomata of the face curedt in the vigorous manner that Dr. Sherwell employed would be cured irrespective of the kind of caustic used.

Dr. BRONSON said that the results were certainly brilliant, and that while other applications might have accomplished the same result, certainly the acid nitrate of mercury with curettage was one of the best methods for treating such cases and he had used this caustic more than any other. As Dr. Whitehouse had said, the curettage was a very important factor in the treatment and there was no reason why it should not more frequently prevent the application of a caustic.

Dr. MORROW congratulated Dr. Sherwell on the admirable results in these cases. He himself had never used this plan of treatment and had never to any extent used this particular caustic. It had the advantage that one could limit the depth of its destructive action perhaps better than with other caustics. With chloride of zinc, for example, one could not limit the destruction so well, and it required a long time to destroy the tissue. The acid nitrate of mercury had the disadvantage of being very painful and again, its use might do much harm in applying it to so delicate an organ as the eye. He had used this caustic for twenty-five years in leucoplasia, and in many ulcerations, syphilitic ulceration of the uvula, of the throat, etc., but he employed it with infinite care, always pressing out any excess of fluid from the applicator, so that it would not fall on the adjacent tissues, and then being prepared to remove any excess with blotting paper. He would, however, hesitate to use it in such close proximity to the eye. The results shown by Dr. Sherwell, however, were admirable. He himself had always preferred to use thorough curettage, followed by the galvanocautery, or in some cases by chloride of zinc, and in others with preparations of arsenic.

Dr. TRIMBLE also congratulated Dr. Sherwell on the good results obtained. He himself was in favor of curettage over all other forms of treatment for epithelioma of the skin. In Dr. Fox's clinic at the New York Skin and Cancer Hospital they used nitrate of silver as a caustic, and obtained most excellent results with very few recurrences, fewer than by any other treatment. He had never used the acid nitrate of mercury in this condition, although he had used it in the manner spoken of by Dr. Morrow. In epithelioma he had used chloride of zinc and nitrate of silver, wherever it was possible. Dr. Trimble thought it better to curette than to use liquid air, carbonic acid snow, X-ray, or any other form of treatment.

DR. SHERWELL said that pain could be controlled or moderated by the use of morphia, hypodermically. The scab needed no dressing other than the neutralization agent, such as the carbonate of soda, and the wound was non-purulent or almost so. The acid was applied in full strength, usually for five minutes to mucous membranes after curettage, and fifteen to twenty minutes or even more elsewhere. Usually repeated, but careful applications were made at the time of treatment. The protecting medium used during the operation was a pad of cotton-wool, soaked in a saturated solution of bicarbonate of soda, squeezed nearly dry, moulded with the finger and held by it in perfect apposition to the margin of the site treated.

Dr. Sherwell thought the method was superior to the X-ray, radium and some other methods in point of simplicity, rapidity and also efficacy. Many of the cases shown had been thoroughly and repeatedly exposed to the X-ray without beneficial result.

Lupus Erythematosus. Presented by DR. G. H. Fox.

This patient, a woman, presented a rather rare and unusual eruption. She was twenty-five years of age, born in Switzerland, married, and gave no history of tuberculosis or of syphilis. She was married three years ago and had one child, one and a half years old, who was perfectly healthy. The disease began in the first month of pregnancy, upon the forehead, and increased until it covered most of the forehead, nose, and a portion of the right cheek. The eruption disappeared at the birth of her child, and reappeared three months later when she stopped nursing the infant. The disease had grown steadily worse since. At the time of presentation the entire face was affected, as were also the ears, scalp, and the upper arms. Her general health appeared to be perfect.

DR. WINFIELD agreed with the diagnosis.

DR. KINGSBURY said that the nodular condition on the forehead and some portions of the face suggested syphilis.

DR. FORDYCE said that the patient had syphilis or lupus erythematosus, but not a combination of the two. He did not think a positive diagnosis could be made without further investigation.

DRS. ELLIOT and HOLDER considered the case to be one of syphilis.

DR. WHITEHOUSE said that he did not know what had been done locally, but he thought the lesions were too smooth for lupus erythematosus. The induration of the lesions, their tenderness, the slight tendency of grouping and the pigmentation inclined him to a diagnosis of syphilis rather than lupus erythematosus. The case should be watched and investigated thoroughly before an absolute diagnosis was made.

DR. BRONSON said that if the case were one of lupus erythematosus, it was decidedly an atypical form. It certainly differed markedly from any case of lupus erythematosus he was familiar with. It seemed decidedly a deep-seated disease involving tissues much below the papillary layer, and with very slight involvement of the epidermis. Moreover, with a disease of such duration and severity, one would expect far more atrophy than was seen here, were it lupus erythematosus.

DR. TRIMBLE was inclined to the diagnosis of lupus erythematosus, rather than syphilis. The case was certainly an atypical one; but one lesion on the

woman's forehead exhibited the very fine black dots indicating the patulous follicular openings, so often seen in lupus erythematosus, which symptom was rarely if ever present in syphilis.

DR. ELLIOT said that one often saw the same amount of atrophy in a case of large resolving papular syphilide, where the intensity of the process was not sufficient to cause a breaking down and ulceration of the skin.

DR. SHERWELL said that he did not understand that the case had had any treatment. It appeared to him more like an atypical case of syphilis. He would like to know what it would do under treatment.

DR. FOX said that if the members had seen the case by daylight, and especially the patch referred to, the opinions might have been different. One patch with distended sebaceous orifices was quite typical of lupus erythematosus. The case was an anomalous one, but it suggested one shown some years ago where the face, arms and hands were affected. As to the smoothness of the patches referred to by Dr. Bronson, he had recently presented a case before the Society where the patches were perfectly smooth, and the consensus of opinion at that time was that it was lupus erythematosus. The pigmentation in the present case was the only thing that suggested syphilis. He had never seen a large papular syphilide produce the lumpy condition or deep infiltration shown here. Assuming it to be syphilis, he would consider it a late syphilide, but there was no grouping, and no circular arrangement of the lesions, which would almost certainly be noted in a late syphilitic eruption. He had seen the case for the first time on the day of the presentation, but would have a Wassermann test made and report the result at the next meeting.

An Unusual Case of Vascular Nævus. Presented by DR. JACKSON.

The patient was a girl four years old. The nævus occupied the right side of the chest. The mother stated that at first there was no elevation of the lesion, but that during the past two years swellings had appeared. Most of the affected area showed a delicate tracing of anastomosing blue vessels, not elevated above the surface of the skin, while posteriorly, and below, there were two dull blue, elevated tumors. One of these angioma was larger than the other and about the size of a small hen's egg.

Dermatitis Herpetiformis. Presented by DR. JACKSON.

The patient was a child nine years old. The disease was said to have begun when she was three years of age, so that it was of six years' duration at time of presentation. During most of this time the disease had been active. For a few weeks after having had measles, and again after scarlatina, she was free of the eruption. Her skin had also healed twice, for a short time, under treatment by Dr. Sherwell and Dr. Winfield.

When presented, both cheeks were covered with patches of thickened, crusted eczema. Scratched papules, some grouped, some red and some not differing much from the color of the skin, were scattered over the whole body, but were most numerous and pronounced on the flexor surfaces of the arms and on the face, the legs being comparatively free. A few days previously she presented crops of vesicles between the

fingers. She had had several outbreaks of such lesions before. She also presented urticarial-like wheals on the face.

DR. MORROW said that he was unable to make a diagnosis. It was a typical case of prurigo in its localization.

DR. BRONSON saw no evidence of prurigo. The eruption appeared to be of a neuropathic character, and might easily come under the head of dermatitis herpetiformis.

DR. G. H. FOX said that the case was suggestive of prurigo, but he agreed with DR. Bronson that it was a case of dermatitis herpetiformis.

DR. WINFIELD said that he had seen the case two years ago and it then looked like a very aggravated case of eczema. The child was constipated, and he gave her very simple treatment, and the condition cleared up very readily and remained clear for about a month, then she returned with a typical outbreak of dermatitis herpetiformis, which kept on getting worse and worse. He then tried all sorts of treatment, arsenic, antipyrine, etc., with no better result. Finally she was lost sight of.

DR. SHERWELL said that he had had the case under observation for six months, and his experience agreed with that of DR. Winfield; but he took it to be a case of dermatitis herpetiformis, and so recorded it.

DR. JACKSON said that he had brought the patient because the diagnosis of prurigo had been made by several doctors. He thought that it was dermatitis herpetiformis rather than prurigo, because of the grouping of the lesions, the history of repeated relapses, the comparative sparing of the legs, the absence of adenitis, and the presence of vesicles and wheals.

Case for Diagnosis. Presented by DR. WINFIELD.

The patient was a woman, seventy-three years of age, a native of Ireland, but a resident of New York for fifty years.

Two years ago she noticed two or three itchy papules in the centre of the left cheek; these enlarged and in three months new ones appeared around the original two; then the eruption began on the other cheek; later she noticed a few on both forearms. Six months ago the eruption appeared on the back of the neck and along the spinal column; the individual tubercles resembled, in some respects, those of tubercular leprosy. Some of the younger ones looked like the lesions of lymphangioma, and again there were suggestions of sarcoma. The woman's general health was perfect; there had been no microscopical examination made.

DR. FORDYCE said that it was certainly a unique case. He could not make a positive diagnosis, but certain lesions suggested that the condition might be a generalized sarcoma.

DR. ELLIOT regarded it as being a case of idiopathic multiple non-pigmented sarcoma.

DRS. WHITEHOUSE and JACKSON agreed that it was a case of sarcoma. All doubt would be cleared away by a biopsy.

DR. G. H. FOX suggested that it was unusual to find sarcoma with so many minute lesions.

DR. SHERWELL said that if the patient had been born or had lived somewhere else the lesions would suggest leprosy.

DR. WINFIELD said that he would have sections of the tumors made by competent observers and report at the next meeting.

Pigmentation in a Negress. Presented by DR. G. H. FOX.

The woman was forty years of age and married. She had had slight, scaly, pigmented areas on the trunk, which she could remove by the use of soap and ointments. About seven weeks ago, pigmented, irregular, poorly defined, yet black, patches appeared scattered over her entire face. The patient said the lesions itched at first, but were never scaly or lumpy. There was no scaling whatever on the face at time of presentation. There was no history nor sign of lues. No fungus was found in the scrapings from the dark pityriasic patches on the trunk.

DR. ELLIOT thought it was chloasma.

DR. HOWARD FOX said that it looked like a pigmentation following a syphilitic, but as the patient denied lues, chloasma appeared to be the only diagnosis that could be made. There was a patch on the body which looked like chromophytosis. A microscopical examination of the scales from this patch proved, however, to be negative.

DR. JACKSON said that he had seen similar cases in negroes, and agreed with Dr. Elliot.

DR. BRONSON accepted the diagnosis.

Chancre of the Lip. Presented by DR. KINGSBURY.

The patient was born in Germany and was forty-one years of age. She was unmarried and was, until recently, employed at cleaning and rough housework. The woman was anaemic, poorly nourished, and was obviously alcoholic. She stated that "sores" appeared on her upper lip about seven weeks ago, and increased rapidly in size. When presented there was an indurated mass involving practically all of the upper lip. The glands were but slightly enlarged, although there was a very general eruption of the large papular variety. The case was of interest owing to the size and persistent hardness of the labial lesion.

DR. KLOTZ said such cases proved that in extragenital chancres of such extent it was advisable and justifiable to institute the general treatment at once, without waiting for the appearance of the secondary symptoms, in order to prevent such disfigurement.

Melanoma of the Foot. Presented by DR. FORDYCE.

The patient was presented before the Society at the January, 1909, meeting. At that time she had on the inner side of her left foot near the malleolus, an irregular tumor, about 2 by $\frac{1}{2}$ inches in diameter, slightly elevated and deep-blue-black in color. There was no haemorrhage nor discharge. She was operated on in February, 1909, a very thorough excision being made. Several months after, there appeared in the lower portion of the cicatrix, a recurrence in the form of an ulcer which was slightly pigmented. Under X-ray treatment, the pigmentation disappeared and the ulcer was not as deep as it had been. Independently of this area, there also occurred, about three months ago, a small pig-

mented spot, about the size of the head of a match, in the healthy skin along the inner border at about the middle of the foot, and since that time a similar one in the scar just above the malleolus. There was no evidence of generalized sarcoma.

DR. SHERWELL said that the marvelous effects of arsenic in some of these cases had been demonstrated nearly twenty years ago. He had treated a few such cases in this manner with very satisfactory results.

DR. G. H. FOX said that the man shown by him at the last meeting of the Society and whose photograph was shown at that meeting, had certainly improved. The tumors had flattened down and the patient's health had improved under the X-ray and the occasional injection of Coley's fluid. He had been much surprised at the result. All of the cases of melanotic sarcoma which he had previously seen had died, and a number of them without receiving any benefit from arsenical treatment.

DR. FORDYCE said the general experience was that arsenic had not proved of value in melanotic sarcoma. A number of successful results, however, had been reported after the administration of arsenic in generalized hæmorrhagic and non-hæmorrhagic sarcoma.

Melanotic Sarcoma. Presented by DR. HOWARD FOX.

The patient was a woman, thirty years of age. She was born in Russia. Her family history was negative. She was the mother of four healthy children. Four years ago she first noticed a small, black, soft tumor, the size of a watermelon seed, upon her left shoulder. Two years ago this was excised by her family physician. Four months later small, black, pin-head lesions appeared scattered about the original tumor. Since that time new lesions have made their appearance over the entire body, and when presented they numbered more than a hundred. They were situated on the face, trunk and extremities, the majority being on the trunk. They were soft and jet black in color, and varied from pin-point to pin-head in size. At the upper end of the original wound there was a round, flattened, button-like, black tumor, the size of a three cent piece. About four months ago, the patient first noticed a painful swelling of the cervical glands of the right side. Three X-ray treatments lessened the pain, but not the swelling of the glands. Two weeks ago she first noticed severe pain over the upper abdomen, with vomiting after eating. The patient was still well nourished, but was rapidly losing her strength and becoming anæmic.

DR. G. H. FOX said that the miliary tumors had been increasing, and two or three weeks ago the patient came to the office with gastric symptoms and enlargement of the glands of the neck, and it seemed as though in two weeks more she would be in a very bad condition. He was surprised to see her looking and feeling so much better without any special treatment. If she had been receiving arsenic during this period one would think it a most brilliant result.

DR. JOHNSTON referred to two cases reported by him in an article on melanoma some time ago. These cases illustrated the fact that local dissemination did not mean generalization necessarily and that it was justifiable to operate. Pollitzer's case was in the muscles of the back. The patient recovered

after ablation and stayed well for four years. Hartley's case was on the back of the neck, with the whole musculature involved. He made a deep dissection and the man was still living seven years after the operation. A case with tumors all over the body was of course hopeless, but the individual should have the benefit of a local operation, when the new lesions were found only in the immediate neighborhood.

DR. SHERWELL said that he had had one case where the lesion was in the centre of the forehead, developing upon the site of a former traumatism. The patient was a married woman. The growth had developed very rapidly; it was nearly as large as the end of a man's thumb. It was removed with a deep incision, and the woman died fifteen years afterward of some other disease. The tumor was examined and found to be sarcoma.

Recurrent Papular Eruption on the Hands. Presented by DR. FORDYCE.

The patient was a Russian about thirty-five years old, rather poorly nourished, who gave an indefinite history of having had several attacks of the present eruption during the past year. It consisted of symmetrically distributed pin-head to small pea-sized papules situated on the extensor surfaces of the hands and fingers. The papules were waxy, pale-white or pinkish in color, and many of them contained a central horny plug or an area of necrosis. On the legs between the knees and the ankles she had several deep-seated indurated nodular lesions, strongly suggestive of erythema induratum.*

DR. WHITEHOUSE said that he was much interested in this case, as the patient had been under his care for a year and a half, three years ago, in the dispensary. From the clinical appearance of the lesions on the hands he would not hesitate to make a diagnosis of tuberculide. Yet at the time he first saw her she was suffering from a tumefaction on the right lower jaw at the junction of the ramus and body, of considerable dimensions. The submaxillary glands as well as the periosteum were involved. She had no other lesions, but gave a history of miscarriages. The condition was regarded as syphilitic and she was put upon antisyphilitic treatment in the form of mixed treatment and iodide of potash in gradually increasing doses between meals. Blue ointment was also used locally. Improvement was slow but after a year and a half the trouble disappeared. She had no other treatment at his hands, and there was nothing to suggest a tuberculous process. The lesion on the calf of the leg might possibly be a syphilitic gumma. It was possible that the condition she presented when under his treatment, and which disappeared under the administration of iodides and mercury internally may have been tuberculous, but he had never known a tuberculous tumor to entirely disappear under such treatment, though sometimes anti-syphilitic treatment would benefit tuberculous processes. He added these notes to the case as being interesting and suggested that a Wassermann test be made.

DR. BRONSON said that there was no question about the lesions on the hands. As to whether the lesions on the legs represented Bazin's disease seemed very doubtful to him. It was more like a simple cellulitis. It was intimated that erythema induration usually occurred in young people.

* Since the case was presented, a Wassermann test had been made with a negative result.

Pemphigus. Presented by DR. HOWARD FOX.

The patient was a girl, seven years old, born in the United States. The present illness began several days after birth. The lesions were first noticed upon the face, later upon the trunk and extremities. On three occasions she had been fairly free from the disease for periods of a few months. At no time had she been completely free from lesions. The general health had been fair. She complained of soreness, but there was not much itching. She had been taking "drops" of some sort all her life. There was no evidence of syphilis from the history or examination of the patient. She was mentally bright. The eruption was general, involving the face, trunk and extremities. There were a few pea- to bean-sized, fresh, tense bullæ and a few yellowish to blackish crusts were present. There was no tendency for the lesions to appear on the exposed parts of the body, and there was no special grouping. The lesions did not appear to develop necessarily as a result of traumatism. The nails presented marked atrophic changes.

DR. WINFIELD said that this case resembled one which Dr. Holder had had under his care at Randall's Island; the patient was under his (Dr. Winfield's) care at the Kings County Hospital for a number of years. When the patient was very young, the bullæ resembled those of chronic pemphigus, and had been so diagnosed, but as the child grew older and was more subject to traumatism, falling, pressure of the clothing, shoes, etc., it was noticed that a lesion would develop at the site of the injury. When the child was transferred to Randall's Island, Dr. Holder diagnosed the condition as epidermolysis bullosa in which diagnosis Dr. Winfield concurred. He thought that the case shown by Dr. Fox would, in time, prove to be of the same character; the appearance of the vesicles and bullæ, with the bloody contents settled at the bottom, was more typical of epidermolysis bullosa than of true chronic pemphigus.

DR. KINGSBURY said that he would not be able to make a diagnosis from the lesions present, but from the history he would regard the case as one of epidermolysis bullosa.

DR. HOLDER said that he agreed with Dr. Winfield in that the case was identical with the case of Fanny Greenberg at Randall's Island. The special characteristic was the usual presence of blood in the bullæ, which settled to the bottom, and finally gave a crescent-shaped crust.

No new light had been thrown on the case. Blood examinations were always negative. Dr. Elliot saw the Randall's Island case at a former meeting of the Society, and said at that time, it did not suggest to him epidermolysis bullosa. For years the girl declined to wear shoes on account of the lesions on the feet, but otherwise pressure and rubbing did not seem to determine the development of the bullæ. The house officer had, at times, been able to raise blisters by vigorous friction.

DR. JACKSON said that he considered the case as one of pemphigus rather than epidermolysis bullosa. A few weeks ago, when he saw her for the first time, she had many bullæ of the true pemphigus type arising from the sound skin. As these were not in locations specially subjected to pressure, as on the upper and inner side of the thigh, a location especially well protected, they did not suggest artificial origin. Moreover the region of the crotch was one specially affected in pemphigus.

DR. HOWARD FOX said that the history favored pemphigus rather than

epidermolysis bullosa, the disease having appeared in well-defined attacks. The fact that the lesions were not on the exposed parts of the body would also suggest pemphigus. Attempts had been made to produce the lesions artificially by rubbing, but without success. The case presented a different appearance when presented from what it did some weeks previously.

Blastomycetic Dermatitis. Presented by DR. WINFIELD.

The patient was a man, fifty years of age, born in Ireland; came to the United States when six years of age; occupation, longshoreman. Six months ago, after receiving a slight injury on the back of his hand, a warty-like excrescence formed; this rapidly spread until the whole back of the hand was involved. When he was first seen by Dr. Winfield the back of the left hand was the seat of a verrucous lesion, clinically resembling tuberculosis. In between the excrescences were numerous miliary abscesses; the whole hand was considerably swollen, and the patient complained of pain. Smears of the pus were taken, and a piece of the growth was excised for microscopical examination; the presence of blastomycetes was demonstrated in both. He was first treated by iodide of potash, with no apparent benefit; later, X-ray treatment was instituted with marked improvement. About two months ago the X-ray treatment was discontinued for two weeks, when the apparently almost cured disease again became active. X-ray treatment was immediately recommenced, fifteen minute exposures being given every other day. When presented the lesion was practically healed.

Sycosis. Presented by DR. G. H. FOX.

The infiltrated patch on the cheek had the appearance of lues or of a lupus vulgaris. The man had had a persistent sycosis for years, leaving a number of pits on the cheeks. It appeared to be a case of sycosis with unusual features.

Acne Varioliformis. Presented by DR. KINGSBURY.

The patient was a tailor, twenty-three years of age, born in Hungary. He was strong and thick-set, and appeared to be in good general health. The eruption began on his face three years ago, and since then he has seldom been free of active lesions. There were a great many small cicatrices on the forehead, cheeks and chest, and the forehead as well as the scalp was studded with indolent necrotic papules.

In reply to an inquiry from Dr. Bronson as to whether the patient had had any treatment, Dr. Kingsbury said that for a week or two the man had been taking mixed treatment and using an ointment of ammoniated mercury.

Unguentum Duret. Presented by DR. KLOTZ.

Dr. Klotz showed a sample of a preparation which had been very highly praised by Jadassohn on account of its effect in rebellious cases

of eczema, and which had been placed among the remedies regularly employed in his clinic in spite of its monstrous composition. This balsam or unguentum Duret, according to the formula given by Jadassohn (*Therap. Monatsh.*, Dec., 1908, xxii., p. 689), contained oil of lithanthracis, oil of cadine, resorcin, menthol, guaiacol, camphor, sulphur, borax, glycerin, aceton, castor oil and lanolin; it was a brownish-black, sticky substance of aromatic odor, and could be used undiluted or incorporated into an ointment or zinc paste at from one to ten per cent. As the compounding of this mixture was somewhat complicated, Dr. Klotz had had it prepared in large quantities by a druggist in New York, from whom it could be obtained under the above name. His own experience with the remedy, although not yet very extensive, had been very satisfactory.

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY.

Stated meeting held October 5, 1909.

DR. SIGMUND POLLITZER in the Chair.

Epithelioma Developing in a Case of Lupus Erythematosus Treated with Carbon Dioxide Snow. Presented by DR. JANEWAY.

The patient, who was about sixty years of age, had suffered from extensive lupus erythematosus for the past thirty years. During the past four years, with the exception of the present year, she had been much benefited by treatment with X-rays. A number of unhealed areas still remained a year ago last April. To these, at that time, the carbon dioxide snow was applied. One patch upon the left cheek was frozen double the length of time given to the others. Two weeks later a definite tumefaction appeared at the site of this lesion. It ulcerated and gradually increased in size until last April, when it measured two inches in diameter. The lesion was then excised under novocaine and the raw area skin grafted. Uneventful healing followed and there has been no recurrence since. Examination of the excised tumor showed that it was a squamous cell epithelioma. On account of the appearance of the epithelioma so shortly after the treatment with the frozen carbon dioxide, and the failure of any reaction after the last X-ray exposure, the neoplasm was viewed as resulting from the trauma of treatment of the lupus by the carbon dioxide.

DR. GOTTHEIL said that the epithelioma was probably caused by the X-ray previously used, rather than by the carbon dioxide snow.

DR. POLLITZER spoke of the long duration of this case—thirty years—and referred to the remark of Besnier, in the early days of the tuberculide discussion, who asked "What become of our lupus erythematosus cases?" implying that they died of tuberculosis. Yet many of them lived for years, and did not die of tuberculosis, and the majority of them probably recovered in the long run, from their dermatosis. He agreed with Dr. Janeway that the method of election for the treatment of epithelioma was excision.

DR. JANEWAY said that he still believed the epithelioma was caused by the freezing, as it had immediately followed the prolonged treatment by that method.

Epithelioma Undergoing Cure by the X-Ray. Presented by DR. JANEWAY.

The patient, aged fifty years, eight years ago developed a small epithelioma, of the basal cell type, upon the nose near the inner canthus of the left eye. This gradually increased in size until five years ago when it was subjected to treatment by the X-rays. The patient discontinued treatment before the cure was effected and the ulcer increased to about one inch in diameter, involving the conjunctiva of the left eye at the inner canthus. Two years ago the patient again submitted to X-radiation, and in a few months time complete healing resulted. Six months later a recurrence again took place, but at the lower margin of the lesion farthest away from the inner canthus of the eye. There had been no recurrence in the latter location and healing was progressing rapidly. The case was shown to illustrate, in connection with the preceding case, which was a more malignant and advanced epithelioma, the advantages of the operative method of treatment.

DR. POLLITZER said that he had found the X-ray treatment of epithelioma of the nose not encouraging, as recurrences occurred in something over one-half of the cases. He therefore advised excision, though the cosmetic result from the X-ray treatment was better. But if the case came later to the surgeon, the resulting deformity would be still greater.

DR. GOTTHEIL said that he had never seen a case of epithelioma cured by the X-ray. There had been many cases in which the lesion had disappeared, but they had all recurred in two or three years.

DR. OULMANN said he believed he had cured cases of epithelioma by the X-ray, and he had followed them for two years without observing a recurrence.

Lupus Erythematosus Treated with Carbon Dioxide Snow. Presented by DR. DITTRICH.

Mrs. M. L., Roumanian, appeared at the Lebanon Clinic, presenting the following condition:

On both cheeks were more or less circumscribed lesions, two inches in diameter with elevated and tumefied margins, atrophic centres, very slight scaling, violaceous in the centre and bright red at the margins. The nose was diffusely reddened and somewhat scaly, and exhibited a number of longitudinal stripes of scar tissue. The eyebrows were reddened and somewhat scaly. An area on the right cheek was treated with

the Holländer method, while the left side was subjected to the action of carbon dioxide snow. When, after a while, the left side showed more improvement than the right, the Holländer treatment was abandoned and only carbon dioxide snow applied. One or two applications of the snow, of thirty to sixty seconds each, were made every week, with firm pressure. Dr. Dittrich stated that Dr. Satenstein had continued the applications and was now trying to convert the abrupt effect between the sear tissue and the healthy skin by applying the snow with varying degrees of pressure. Dr. Satenstein had called attention to the fact, that the sooner one removed the scab, the finer, softer and more pliable scar one would obtain.

This case was not shown as cured, as there were some active foci left, especially in the concha of the right ear, but to show the good results that could be obtained with the carbon dioxide snow in this affection.

Dr. GOTTHEIL said that he had seen this case often. It was a marked case of the discoid form with great infiltration, and the improvement had been marvelous. He said that the sooner we transformed a plaque of lupus erythematosus into a smooth scar, like that caused by carbon dioxide, the better.

Sailor's Skin (Unna). Presented by DR. OULMANN.

The patient was a woman, fifty-five years old, married, healthy and had had two healthy children. One child died when twelve months old. She had had two miscarriages of three months. After the first one the menses stopped for sixteen months, when she was operated upon, after which, the menstruation was normal. There was no history of lues. The patient's employment caused her to be constantly out-of-doors, exposed to all kinds of weather. About ten years ago she noticed red, pruritic patches developing on the cheeks. These lesions, which were preceded by a sensation of chilliness, slowly spread to the nose, lips and forehead, and were associated with a slight sensation of burning. The forearms and hands became reddened and caused considerable pain. Small vesicle-like lesions developed in both ears. The condition had not changed much for the last eight years, but the patient improved a little each summer. She suffered from insomnia and had lost thirty pounds during the ten years.

Careful examination showed that the red patches and the vesicle-like lesions of the ears consisted of capillaries, the terminal phalanges of the right and middle fingers of the right hand showed infiltration, and the skin was thickened. The face showed decided pigmentation and the telangiectasia was marked. Under X-ray treatment and iron internally the subjective symptoms disappeared almost entirely, while the objective symptoms improved also. Dr. Oulmann regarded the case as one belonging to the class which Unna had designated as "sailor's skin."

Dr. GOTTHEIL said that he could see in this case only the rosacea which was seen in the faces of many exposed to the weather.

DR. POLLITZER said that this was not a case of rosacea. The telangiectases were irregular, not in the usual rounded areas, and there was no inflammation. The skin also was very dry, and there was a certain amount of yellowish pigmentation visible by daylight.

DR. OULMANN said that he had never seen a case of rosacea extending to the ears and forearms as in this case, nor with such severe subjective symptoms.

Leprosy. Presented by DR. GOTTHEIL.

This case was shown by Dr. Gottheil before the Manhattan Dermatological Society, October 1, 1909.

DR. OULMANN said that he had used nastin for a year and a half, but without the good results observed by Gottheil, and he believed the general experience corresponded with his own. He had once seen very great improvement after an attack of erysipelas.

DR. POLLITZER said that he had seen similar improvement after the most varied treatments—in one case after vigorous anti-syphilitic treatment at the Hot Springs of Arkansas.

DR. GOTTHEIL said that he did not claim a cure in this case, but only an improvement.

Case for Diagnosis. Presented by DR. POLLITZER.

The patient, aged nineteen, a widow, had nothing in her past history which threw any light on her present condition. The lesion had been present for six months, beginning under the right eye, and gradually progressing across the bridge of the nose, to the skin under the left eye. The lesion consisted of a light-red erythematous patch, with rather sharply marked borders. There was, however, no dilatation of the follicles, and no scaling had ever been present. Palpation of the lesion revealed a remarkable apparent thickening of the whole skin and subcutis, giving a sensation similar to that felt in scleroderma. Over the bridge of the nose it was quite impossible to raise the skin between the fingers. Dr. G. H. Fox, who had also seen the case, suggested its possible luetic nature, but the lesion had continued to spread despite anti-luetic treatment. There had never been any subjective disturbances in connection with the development of the condition.

DR. WILLIAMS said that until the finger touched the skin, the whole appearance was that of lupus erythematosus. There was, however, a firm mass extending outward from each side of the nose and apparently connected with the bone. He suggested that this might be an independent process, not connected with that on the surface, which he believed to be lupus erythematosus.

DR. WILE said that he had watched this case carefully, but had never seen any scaling or any plugs, and that therefore he hesitated to make a diagnosis of lupus erythematosus.

DR. POLLITZER said that in spite of the absence of the characteristic features mentioned by the previous speakers, and the presence of the hard masses, he believed this to be a case of lupus erythematosus.

Telangiectasia and Pigmentation of the Abdomen Produced by the X-Ray. Presented by DR. KINGSBURY.

The patient was a small, poorly developed woman, fifty-nine years of age. Eight years before, according to her history, she received two X-ray exposures on successive days. A stone in the bladder was suspected, and the rays were used for diagnostic purposes only. Ten days later a severe dermatitis developed on the abdomen, and this was followed by superficial ulcerations that have persisted. There were present, to the left of the umbilicus, an ulcerated area about the size of a silver dollar, and a linear cicatrix of about six inches, about half an inch to the right of the median line. Over the entire abdomen there was marked telangiectasia and deep pigmentation. Two years before, an ovarian tumor was removed and, owing to the condition of the abdomen, the vaginal route was selected. A week after the operation the woman developed symptoms of intestinal obstruction and a hurried laparotomy was performed. Later, to the surprise of the surgeons, the wound healed by first intention. The case was of interest, and of some value, illustrating, as it did, the possibility of obtaining good surgical results, in operations necessitating incision into the peculiar pathological tissue produced by the rays.

DR. DAISY ORLEMAN ROBINSON showed cultures of the following:

Sporotrichum Beurmanni (cultures at different stages), Trichophyton crateriforme, Trichophyton acuminatum, Trichophyton violaceum, Trichophyton gypseum, Trichophyton faviforme, Trichophyton niveum, Microsporon Audouini, Microsporon lanosum, Epidermophyton inguinale. These cultures were grown on Sabouraud's medium:

Distilled water	1000 gm.
Peptone granulée (Chassaing).....	10 gm.
Maltose brute (Chanut).....	40 gm.
Agar-agar	18 gm.

CHARLES M. WILLIAMS, M. D., *Secretary.*

PHILADELPHIA DERMATOLOGICAL SOCIETY

The regular monthly meeting of the Philadelphia Dermatological Society was held at the Jefferson Hospital, on November 8, 1909, at 8:30 o'clock. DR. CHARLES N. DAVIS, Presiding.

Lichen Urticatus. Presented by DR. STELWAGON.

A typical case of this character was exhibited: the patient was a male child of four years. According to the mother the condition had lasted somewhat intermittently for one and one-half years, being much

worse during the summer months. The eruption started as a distinct wheal, upon the summit of which there was a tendency for a small papule or vesicle to form. The eruption was much more marked on the extremities than on the trunk; papulo-vesicular lesions were present on the dorsal surfaces of the hands, the forearms, the upper arms, and the legs. There were characteristic wheals on the face; the trunk was but slightly involved. Itching was marked.

DR. DAVIS referred to the fact that the cases of this disease that he had seen in London had exhibited numerous lesions on the buttocks; the present patient showing but a slight eruption on this area.

Lupus Erythematosus of the Scalp and Face. Presented by DR. GASKILL

The patient was a young woman, who gave the history of having had the first outbreak of the disease four years ago. The eruption developed upon the face and scalp at practically the same time, small patches first appearing; these increased in size and some of them became confluent. When presented, there were fully a dozen plaques on the face, the nose, the cheeks, and the forehead, from a dime to a fifty cent piece in size, absolutely typical. Fully three-quarters of the scalp was involved by one large patch, originally consisting of several smaller lesions which became confluent, the clinical appearance was diagnostic of the disease; the area attacked was entirely denuded of hair. The patient was treated in Liverpool with the local application of pyrogallic acid. Carbon dioxide snow had been applied several times to the patches on the face.

DR. KNOWLES said that several cases of erythematous lupus had responded nicely to the freezing method.

Vitiligo in a Child of Five Years. Presented by DR. KNOWLES.

The girl exhibited was five years of age last August. The little patient had always been of a nervous temperament, never very strong, and usually had a poor appetite. Last May, while the child was but four years old, the mother noticed the appearance of white spots on the neck; new lesions appeared during the following weeks and the old ones became larger. When presented, fully one-half of the cutaneous surface was without pigment; the condition was particularly well marked on the abdomen. The face, neck, the trunk, and the extremities were all attacked; there was a marked tendency to a symmetrical arrangement. The legs, however, showed but few patches. The mother considered that there had been a slight improvement since the medicine was started [Fowler's solution in ascending doses]. The case had been under treatment for two months.

DR. SCHAMBERG had noticed the association of vitiligo, with Graves' disease in several instances.

Those present remarked on the youth of the patient, extensive vitiligo being unusual in one so young.

Tar Folliculitis with Multiple Epitheliomata. Presented by DR. HARTZELL.

The patient was a male of forty-five, born in Ireland. He gave a history of having worked in a tar-roofing manufacturing plant for twenty years. The eruption began five months ago. There were numerous inflamed follicles on the dorsal surfaces of the hands and the forearms, some of them on the right forearm were deep-seated; there were numerous large comedones on these areas. There was an oval hazelnut-sized, ulcerating lesion on the right side of the serotum (epithelioma), and a smaller lesion of the same character on the left side. The folliculitis on the involved areas was very marked, and a great many of the lesions were breaking down, exhibiting epitheliomatous change.

DR. SCHAMBERG said that he had previously seen the patient, and considered the case of unusual interest. He thought the comedones, produced by the blocking of the follicles by the tar, should be particularly noted. All stages of beginning epithelioma were present.

DR. HARTZELL thought the case unusually instructive as it demonstrated a definite known cause for epithelioma.

Recurrent Erythema Multiforme. Presented by DR. DAVIS.

The patient, a girl of fifteen years, gave an interesting history of having had an eruption on the hands, wrists, the feet, the ankles, and the neck, twice yearly, spring and autumn, for the last eight years. The present outbreak appeared five days ago, with the appearance of reddish spots on the areas mentioned; chilliness and malaise preceding the eruption. When presented there were macules, with a slight tendency to papule formation, but most of the lesions were distinctly vesicular or bullous, on an inflammatory base; some of the latter were umbilicated. The dorsal and palmar surfaces of the hands, the lower portions of the forearms, the plantar and dorsal surfaces of the feet, the ankles, the neck, and the cheeks were attacked. The lesions were mostly superficial and chiefly split-pea-sized. There were a few small bullæ on the mucous membrane of the lips.

DR. HARTZELL referred to a patient who had had an eruption of erythema multiforme every May for fifteen years.

DR. SCHAMBERG had had a case of this character, in which albumin was present in the urine, and was somewhat persistent.

Case for Diagnosis. Presented by DR. SCHAMBERG.

The patient exhibited was a woman of twenty-seven; six years previously, she had been treated by Dr. Schamberg for a varioliform syphilide; medication was followed for only a short period. The patient

was very irregular in her visits, and numerous outbreaks occurred. About two months ago a physician prescribed seven pills daily, the ingredients being unknown, for an acute relapse. After taking these pills for some days the face became swollen, the gums were tender, there was a marked amount of saliva, and several teeth fell out. She was then treated in a local hospital, on the advice of her physician, the treatment apparently consisting, from the description of the patient, of various means of eliminating the drug; hot packs, steam baths, and other means for producing profuse sweating being used. After remaining in the hospital for five weeks, she again came under Dr. Schamberg's care. The history at this point became very confusing; apparently, however, after taking the pills prescribed by the other physician, an ulceration developed on the right upper jaw, posteriorly. The ulceration had increased until, at the time of presentation to the Society, it was the size of a twenty-five cent piece, with a reddish, oozing surface; the lesion was difficult to examine as the jaws had become markedly ankylosed. Extensive infiltration could be felt through the right cheek, the skin was bound down and slightly indented. Six teeth had fallen out, and the gums demonstrated marked signs of ptyalization.

Dr. Schamberg presented the case because he could not quite make up his mind whether the lesion was syphilitic in origin or a necrosis of the bone due to mercury; he was inclined to favor the latter opinion.

Those present were agreed that probably the mercury had caused the condition.

Case for Diagnosis. Presented by DR. STELWAGON.

The patient was a woman of forty-six, who gave a history of having had the present eruption for six years. There were silver-dollar size annular lesions on the right knee, the outer side of the right ankle, below the external malleolus, and also on the sole of the right foot. The circumference of some of the plaques had an indefinite appearance of being made up of separate flat lesions, the others had the appearance of involuting patches of psoriasis; annular lichen planus was also thought possible.

Those present thought that the lesions were probably syphilitic.

DR. HARTZELL referred to the fact that internal treatment alone did not always cure palmar or plantar syphilis, but local applications were also required.

DR. SCHAMBERG considered that large doses of mercury rather than the iodides were required in this type.

Lichen Planus Annularis (?). Presented by DR. SCHAMBERG.

Some weeks previously the present eruption appeared on the face of the young woman presented by Dr. Schamberg. The patient had been married for but four months, and the suggestive history was obtained of a miscarriage at six weeks. On the backs of both hands, there

were a half-dozen or more flat papular lesions, very superficial, violaceous in color and almost free from scales. There were eight dime-sized, superficial, annular, dark-red lesions on the forehead, just above the eyebrows, and on the chin. There was a suggestion in some of the lesions of an atrophic centre, but probably the raised annular formation gave the appearance of a depression, which was in reality not present.

DR. DAVIS said that Dr. Knowles and himself had previously seen the case and several diagnoses had been considered, such as annular syphilis, and atypical lupus erythematosus, and annular lichen planus; the latter being the most probable.

Those present agreed that it was probably an atypical case of lichen planus annularis.

Case for Diagnosis. Presented by DR. SCHAMBERG.

A case of somewhat the same type as the two other annular cases, exhibited by Drs. Stelwagon and Schamberg, was presented by Dr. Schamberg. The patient was a woman of twenty-nine who gave a history of having had the eruption, intermittently, for the past year. The anterior surfaces of the upper thighs, the right knee, and the forearms were the sites of a superficial, reddish, erythematous-papular eruption; pruritus was slight. The patches were serpiginous in outline. The Wassermann test was negative; the Noguchi, and also the butyric acid experiments were faintly positive.

Report of Case Previously Shown.

DR. HARTZELL said that the case presented by Dr. Schamberg at the last meeting, with the diagnosis of epithelioma, and which Dr. Stelwagon and himself had considered molluscum contagiosum, had recently come under his care and proved to be a sebaceous cyst of an unusual type.

Presentation of Microphotographs.

DR. SCHAMBERG exhibited several microphotographs of the Pediculoides ventricosus, the cause of straw-itch.

FRANK CROZER KNOWLES, M. D., *Reporter.*

MANHATTAN DERMATOLOGICAL SOCIETY

April, May and June, 1909.

CHARLES A. KINCH, M.D., President.

Scleroderma and Sclerodactylyia. Presented by DR. COCKS.

Rose P., Hungarian, thirty-five years of age. She was first seen by Dr. Cocks eight years ago, when she complained of cold fingers and toes, with considerable pain after exposure. During the day the skin was tightly drawn over the parts, at night it was somewhat relaxed.

At times the parts became swollen and painful, and sleep was interfered with. The diagnosis then, was Raynaud's disease, and the patient was placed on anti-syphilitic treatment. Marked improvement occurred in a few weeks. The treatment was continued for eight months, when the patient disappeared until November 9, 1908. On this date she gave the following history: A year after discontinuing treatment she noticed a hardening of the cheeks over the malar bones; laughing and smiling caused some discomfort; the mouth was tightly drawn.

When presented the skin in the malar region and about the mouth appeared dry and shiny, and was surrounded by an inflammatory margin; the features were gone; the parts felt leathery and the skin was adherent to the deeper tissues. The disease had advanced more rapidly on the fingers than on the face. Here the skin looked and felt like pieces of parchment; it was immovable and deeply fissured. There was some absorption and retraction of the ends of the fingers.

Recently she had again been under anti-syphilitic treatment with very slight improvement. The case was presented as one of scleroderma and sclerodactyly preceded by Raynaud's disease.

Lymphangioma Circumscriptum. Presented by DR. GOTTHEIL.

Charlotte F., ten years of age; condition not present at birth. At about the sixth month the mother noticed several small "blisters" in a group, about the size of a ten cent piece, on the right side of the patient's chest. These had remained ever since. New ones had appeared in the neighboring skin, and had slowly grown larger. They were without any special coloration at first, but when about eighteen months of age, some of them became red, and more recently a few had assumed a bluish tint. The affection caused the patient no subjective symptoms.

Examination, April, 1909. In the right lower axillary region the lesions covered an area of three inches square: the rest of the integument presented no abnormalities. The eruption consisted of grouped, moderately hard, prominent, hemispherical lesions, of different sizes and color, and evidently of different ages. The smallest and most recent ones were aggregations of a multitude of closely sown pin-head-sized and smaller flat vesicles, with thick epidermic coverings. Puncture of one of these vesicles permitted two drops of a clear watery fluid to trickle out slowly. Older lesions were more prominent and hemispherical, and varied in color from dark pink to red; a few of the largest being bluish black, and presented a hemorrhagic appearance. In a few places there were minute dark crusts covering several lesions.

A microscopical examination was made by Dr. Satenstein. Occupying the papillary and subpapillary regions were varying sized, more or less communicating spaces lined with endothelium. The spaces were separated from the epidermis by a layer of connective tissue. The

contents of these spaces were composed of a finely granular network containing blood cells and swollen endothelial cells. The entire system of spaces was very superficial. The epidermis was unaffected. Surrounding these spaces was a moderate number of small round cells. The blood vessels were not affected. The connective tissue showed no changes.

Chancre of the Lip. Presented by DR. KINGSBURY.

C. H., thirty-two years of age, a quadroon, born in the United States. He was a large, muscular man, weighing over 200 pounds. About four weeks ago a small ulcer appeared on his lower lip, which has gradually increased in size. When presented there was considerable protrusion of the lower lip, and near the centre there was an indolent, slightly indurated ulceration about three-quarters of an inch in diameter. The lips were rough and fissured, and at the left angle of the mouth there was a deep furrow. The post-cervical and epitrochlear glands were markedly enlarged, but the submaxillary were only slightly involved. No other cutaneous manifestations of syphilis were present.

Recurrent Erythema Multiforme. Presented by DR. GOTTHEIL.

Mrs. C. B., fifty-seven years of age, diabetic; first seen in June, 1907, with an eruption which had been present more or less for two years. There were numerous, circinate and round, raised, erythematous or purplish lesions of varying size on his forehead, cheeks and neck. It was considered to be a case of erythema multiforme, but no results were obtained by the usual therapy. In July, with the exhibition of mercurials internally and externally, the eruption entirely cleared up. Later in July and in August, he had similar attacks which responded to the same treatment. During September and October he had a very severe attack; the backs of the hands, wrists and palms, as well as the face and neck, showed many large lesions. They were not so distinctly circinate, but looked very much like grouped tertiary luetic lesions. Late in October the patient had a unilateral outbreak which so closely resembled a late papulo-tubercular specific eruption, and yielded so promptly to anti-luetic treatment, that Dr. Gottheil was tempted to change his diagnosis. During 1908 he had five precisely similar attacks, with lesions in the same locations and responding to the same treatment. At the time of presentation he was having his first attack of the year. He had had, therefore, twelve distinct attacks of erythema multiforme of the circinate and tubercular variety during the last eighteen months; in fact the disease had been present the greater part of the time, the intervals during recurrences being very short.

DR. ABRAMAMS remarked that diabetics were prone to have skin lesions, especially of the erythematous type, and seemed to improve under anti-syphilitic treatment. Though some of the lesions present resembled those of syphilis, he considered the case as one of erythema multiforme in a diabetic.

Tumor of the Lip. Presented by DR. KINGSBURY.

J. G., a schoolboy, fourteen years of age. The patient had a peculiar inflammatory growth, about the size of a hazel nut, on the inner surface of the lower lip. This was said to have been present for nearly three years, and to have been slowly increasing in size during the past two months. There was no glandular enlargement. Sections were examined by Dr. M. Wollstein. The pathological report stated that the tumor was composed entirely of hypertrophic glandular tissue with marked inflammatory infiltration, with no evidence of malignancy.

Post-Syphilitic Pseudo-Elephantiasis. Presented by DR. GOTTHEIL.

Julius S., thirty-five years of age, admitted to Lebanon Hospital in December, 1908. Chancre and secondaries eight years ago. The condition on his leg had been present for a long time. The entire right leg, from just below the knee to the instep, was irregularly swollen to perhaps twice the normal size. It was rugose and intensely hard. Several extensive ulcerations were present.

Chancroid with Extensive Necrosis of the Glans Penis (Balanitis Necrotica, "Finger"). Presented by DR. WOLBARST.

Mr. M., twenty-three years of age, Russian. In August, 1908, the patient presented a large ulceration of two months' duration, on the right side of the glans penis. The margin and base were necrotic, and very painful, especially on erection. There was no glandular involvement. The treatment consisted of daily cauterization with pure carbolic acid, followed by alcohol, and dressed with either a powder (aristol or iodoform), or a wet dressing (boric acid, bichloride, 1-2000, or Thiersch's solution). After six weeks' treatment some improvement was noted. The ulceration was somewhat smaller and the base took on a more healthy appearance. This improvement continued until the end of October. At this time the necrotic process began to extend and soon reached the mucous membrane of the urethra. Treatment of this area was not accompanied with much success. The lesion on the right side healed, but the process continued to spread and soon involved the entire left side of the glans. The progress was very slow and almost imperceptible. On January 2, 1909, the patient was anæsthetized and the entire necrotic area was destroyed with the Paquelin cautery. In a few days the slough came away and the entire lesion seemed to have taken on a more healthy tone, except that the amount of broken down tissue left a wide gaping hole where the urethra was formerly.

DR. BLEIMAN, although agreeing with the diagnosis, questioned whether the great destruction present was due to the disease or to the use of the pure carbolic acid.

Radiodermatitis of the Forearms; Gangræne of the Finger. Presented by DR. GOTTHEIL.

This patient was presented at a previous meeting for a radiodermatitis affecting the extensor surfaces of both forearms. These lesions, which were incurred eighteen months ago, had almost entirely healed. Two weeks ago there appeared what was seemingly an infectious cellulitis of her left index finger. She was referred to the surgical department of the Lebanon Hospital, and a free incision was made. Nevertheless, the distal phalanx of the finger turned black and shrivelled. Recently the condition has improved under a dry dressing. When presented the tip of the finger was black and gangrenous; the rest of the finger, though red and swollen, did not contain any pus. Both the radial and ulnar arteries were apparently in good condition.

The X-ray was applied more than eighteen months ago to the extensor surfaces of the forearms only; the radiodermatitis was of one and one-half years' duration, and the lesion of the finger was acute and quite recent. On the other hand, Dr. Gottheil was of the opinion that no infection of the ordinary kind would cause dry gangræne.

The case was presented for the question as to whether there was any connection between the two processes.

Generalized Lichen Planus. Presented by DR. OULMANN.

The patient was a married woman who had always enjoyed good health. About three weeks ago a number of reddish papules, intensely itchy, appeared on the soles of her feet. A few days later similar ones appeared around the ankles and wrists. About two weeks ago the entire body became covered with similar papules. They were especially well marked under the breasts and around the waist. The mucous membrane of the mouth was also affected. The legs were swollen and the papules here had the appearance of lichen corneus.

The case was interesting because of the acute onset and on account of the rarity of lichen planus of the palms and soles.

DR. GOTTHEIL remarked that in such an acute case one would expect to find the formation of bullæ.

Papular Scrofuloderm. Presented by DR. GOTTHEIL.

Mr. M. L., thirty-eight years of age, single, syphilophobic, said to be a paretic. On the inner aspect of his right lower leg was an area, four or five inches in size, occupied by a closely aggregated mass of hard papules. The skin in this location was dark purple, and considerably indurated. The individual papules were pin-head to small pea-size; many were distinctly peripileous; a few presented signs of suppuration. Scratch marks testified to the presence of itching. The only other lesions present were three small papules on the back of one hand, one papule and a few atrophic scars on his right temple.

The lesion on the leg had been present for thirty years. He said that it began with an injury to the part which led to blood poisoning, and from which he was sick a long time. It improved at times, but never entirely disappeared, the severity of the condition depending, apparently, upon his general health. Each individual nodule developed and ran its course slowly, taking at least a month to involute; and their marks would remain six months or more. Formerly they would suppurate; recently this very rarely occurred. Occasionally precisely similar papules would appear on the backs of his hands and on his forehead.

The patient claimed that the affection was very common in Russia, especially on the hands, and was sometimes so severe as to require amputation. Dr. Gottheil regarded the affection as tuberculous or toxo-tuberculous, and thought that it should be designated as scrofuloderma, because it failed to correspond to any of the ordinary skin tuberculoses or tuberculides; on the other hand it was fairly like some skin disorders formerly called scrofulodermata.

Dr. TRIMBLE believed the case to be one of chronic eczema or chronic lichen planus, but could not account for the thirty years' duration.

Dr. WEISS remarked that erythematous lesions which became infiltrated and broke down in six weeks, was more of the life history of acne atrophica than of scrofuloderma.

Keloids Following the Application of Acid to Verrucæ. Presented by
DR. GEYSER.

Miss D., saleswoman. The patient had been troubled with a large number of warts, each the size of a split-pea, upon her hands, especially clustered near the base of her thumbs. In July of last year a physician applied some acid with the end of a toothpick; shortly after the treatment each wart broke down, became pustular, then healed, replacing the verruca with a keloidal mass. Dr. Geyser stated that he would first apply the X-ray and should this fail, then the high frequency current would be used, cautiously, as in a susceptible patient this latter treatment might again cause keloids.

M. B. PAROUNAGIAN, M. D., *Secretary.*

REVIEW
of
DERMATOLOGY AND SYPHILIS
Under the Charge of GEORGE M. MACKEE, M.D.

SERUM DIAGNOSIS

By HOMER F. SWIFT, M. D.

A Comparative Study of Serum Diagnosis in Syphilis. H. F. SWIFT,
Arch. Int. Med., 1909, iv, p. 376.

In 97 trials with the Bauer technique only 37 per cent. of the sera contained enough native haemolysin for sheep cells to perform the test. Of the 65 syphilitic sera, 65 per cent. were positive with the Wassermann reaction, while only 33 per cent. were positive with the Bauer method. Further, the method cannot be applied to the blood of infants nor to spinal fluids. In a comparison of the Wassermann and Noguchi methods, in 319 syphilitic sera, the latter is shown to be from 5 per cent. to 20 per cent. more sensitive according to the stage of the disease. In 119 non-syphilitic sera there were three positive Wassermann reactions—one leprosy, one scarlet fever and one varicella in a child with the stigmata of congenital syphilis. With the Noguchi there were 21 positive reactions, so that although it is more positive in syphilis, this increased sensitiveness seems to give a positive reaction in too large a number of non-syphilitic sera.

Complement Fixation with Lecithin as Antigen in Pellagra. C. C. BASS, *Med. Jour.*, New York, 1909, xc, p. 1,000.

Sixteen cases of pellagra were studied with the Wassermann reaction in which lecithin was used as antigen. Of this number two were known to have had syphilis, one was a patient with malaria, and in another the serum was obtained at autopsy. All of these gave a positive reaction, as did eight of the twelve remaining cases in which the possibility of syphilis could be fairly well eliminated. Attention is called to the fact that most other diseases which have given a positive reaction are protozoan in origin, and the possibility of pellagra having a similar aetiological agent is suggested.

The Use of Active and Inactive Serum in the Complement Deviation Test for Syphilis. H. F. SWIFT, *Arch. Int. Med.*, 1909, iv, p. 494.

The oversensitiveness of the Noguchi method is attributed to the

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use of active serum, so a comparative study of this method was made with both active and inactive serum and the results controlled with the Wassermann method. When inactive serum was employed it was used in double the quantity of guinea-pig serum as complement. This is the ratio in the Wassermann method. The results obtained with syphilitic sera are:

PERCENTAGE OF POSITIVE RESULTS.

Stage of Syphilis.	No. of Cases.	—Wassermann—			—Noguchi (Active)—			Noguchi (Inactive)				
		Diag- nostic.		Prog- nostic.	Total.	Diag- nostic.		Prog- nostic.	Total.	Diag- nostic.		Prog- nostic.
		%	%	%		%	%	%		%	%	%
Primary	7	86	0	86		86	0	86		86	0	86
Secondary.....	38	97	0	97		95	5	100		100	0	100
Tertiary	25	76	24	100		84	16	100		80	20	100
Latent (early)....	33	66	18	84		80	6	86		70	14	84
Latent (late).....	26	35	42	77		66	15	81		46	27	71
Nervous	23	52	30	82		70	14	84		55	27	82
Visceral	7	72	14	86		86	0	86		72	14	86
Tabes.....	18	44	22	66		66	11	77		44	28	72

In 17 non-syphilitic sera which gave a positive Noguchi reaction all were negative with the Wassermann method, and with the Noguchi with inactive serum. The rate of loss of complement-binding power produced by inactivating six syphilitic sera was from two to four, while with two non-syphilitic sera it was six. From the results of this work it seems safer to use inactive serum in the Noguchi modification. This adds only a little to the labor involved in performing the test, and makes it much more specific.

SYPHILIS OF THE SKIN AND MUCOUS MEMBRANES, HYPERTROPHIES, ATROPHIES, BENIGN AND MALIGNANT NEW GROWTHS

By UDO J. WILE, M.D.

Apparent Unilateral Congenital Adenoma Sebaceum of the Face.

C. AUDRY, *Ann. de dermat. et de syph.*, May, 1909, x, No. 5, p. 318.

The case herein described is that of a woman of fifty-three years of age who presented what clinically and by anamnesis, seemed without doubt to be "adenoma sebaceum" of one side of the face. The patient's general condition also corresponded to that usually seen in patients with this affection; although not an idiot she was mentally torpid and her development and facies suggested imperfect development. Audry com-

ments on the unusualness of the unilateral feature. Histological examination of one of the lesions, however, showed an entirely different picture from that usually found in adenoma sebaceum; and there was no suggestion of nævus-like structure in the tumor. The nearest known pathological entity, which Audry could compare it to, was molluscum fibrosum, but he is at a loss to find a proper name and place for the condition.

Ichthyosis in a Hereditary Syphilitic Child of Ten Years, Presenting Pupillary Rigidity, Spastic Paraplegia and Dementia. LEON-KINDERBERG AND MONDOR, *Bull. des hôp. de Paris*, Nov., 1909, p. 556.

The authors present a child of an avowedly syphilitic father; at birth the infant had a specific eruption, which was treated by mercury. Development during the first few years was normal, but at the age of eighteen months, generalized ichthyosis was complete. Quite suddenly, at the age of four and a half years, the intelligence became completely deadened. At this time the child showed spastic paraplegia, pupillary rigidity, and psychic disturbances which permitted the diagnosis of general infantile paralysis. Examination of the cerebro-spinal fluid showed a lymphocytosis. This symptom complex of idiocy, spastic paraplegia, and ichthyosis, the authors ascribe to the existence of hereditary syphilis in the child.

Pachydermie Occipitale Vorticellée (Cutis Verticis Gyrata). C. AUDRY, *Annal. de dermat. et de syph.*, x, 1909, No. 4, p. 257.

Audry presents a case of cutis verticis gyrata, or, as he prefers to call it, "pachydermie occipitale vorticellée." The patient, a man of thirty years, presented himself for impetigo capitis, for which Audry treated him. When seen a short time after, he presented a curious thickening and rolling up into folds as it were, of the occipital portions of the scalp, and thickening of the nuchal portion of the scalp such as one finds in fat individuals. The rolled up appearance of the scalp, Audry says, reminded him of the convolutions of the brain. The hairs over this area were in no way changed, and there were absolutely no subjective symptoms. A histological examination was not made, but Audry cites the histological findings of von Veress, who described in his cases, absence of the sebaceous glands and circumscribed, and diffuse areas of inflammation; he therefore believed the process to be the expression of a chronic dermatitis.

The Combined Picture of Idiopathic Atrophy of the Skin and Circumscribed Scleroderma. G. NOBL, *Arch. f. Dermat. u. Syph.*, Dec., 1908.

Nobl describes herein the case of a girl of fourteen years, with typical

idiopathic atrophy of the skin, extending from the spine of the scapula to the sixth rib of one side. In the centre of this atrophied area, about the level of the third rib, were circumscribed tumor-like areas of extreme induration. Clinically, as well as histologically, these areas appeared as keloid-like scleroderma, and Nobl having followed the development of the case, does not believe the picture to be a single clinical entity in different stages of development, but rather a combination picture of two quite different processes.

Tattooing and Syphilis. S. DOHI, *Arch. f. Dermat. u. Syph.*, May, 1909.

Dohi relates herein a remarkable case of a man, who sixteen years previously had had himself most elaborately tattooed. The picture accompanying the description shows the patient's entire back, shoulders, upper arms and thighs, covered with a really beautiful tattoo in red and blue colors, of a heroic figure in the act of killing a wild boar with his naked fist. The blue color had been tattooed with India ink, the red with cinnabar. The patient stated that the irritation from the blue-tinted areas lasted only a few days after the tattooing, whereas the red-tinted areas gave rise to occasional itching every spring for three years thereafter. The man presented himself at the age of thirty-five years, before the writer, with a florid primary and secondary syphilis. The eruption was papulo-squamous, and at first sight presented nothing unusual. On close examination, however, it was noticed that the eruption was strictly limited to those parts of the tattooed areas which were blue; in no single instance was a papule to be seen where the cinnabar had been used. This curious distribution of the lesions was particularly striking on the body of the tattooed figure, where for example, the eyebrows, hair and the lines marking the arms and shoulders, which had been tattooed in blue, were covered with papules, while the immediately adjacent red portions of the face and body were absolutely free of lesions. It has been shown that cinnabar, which is hydrargyrum sulfuratum rubrum, is not absorbed into the system when used in tattooing, hence Dohi thinks its protective action in this case in preventing the appearance of the papules, is merely due to a local action of the dye; possibly that the skin in these areas was an unfavorable soil for the growth of the spirochæta pallida. He regards the whole phenomenon as conclusive evidence of the specific action of mercury on the spirochætae.

Observations on Some Cutaneous Cyst Formations and an Unusual Disease of the Hair Follicle. A. R. ROBINSON, *Med. Jour.*, New York, 1909, lxxix, No. 23.

The author here gives the results of his histological studies of the cystic tumors of the skin. He has studied particularly milium and sebaceous cysts. After exhaustive study into the ætiology and histo-

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pathology of these conditions, he draws the following conclusions: Cysts of the pilosebaceous system, should be classified on the character of the contents, into horn cysts, mixed cysts, and sebaceous cysts. A pure horn cyst may exist, but not a pure sebum cyst. A sebum cyst never arises primarily in the secretory part of the sebaceous gland, nor in a special excretory duct of this structure, but always in some part of the common excretory duct of the pilosebaceous system. A pure horn cyst may be situated in the follicle opening, or on one side of the excretory duct, and by misplacing the orifice, make the latter invisible, or apparently not connected with the cyst. The article is accompanied by numerous microscopic drawings, showing the development of the cyst formations, and also by the report of a case of an unusual comedone condition, which after microscopic study the author concludes was a case of acanthoma and fibroma.

A Case of Syphilis Resembling Pityriasis Rubra Pilaris. HOWARD FOX, *Jour. Am. Med. Assn.*, 1909, liii, No. 12, p. 947.

The author describes a case of miliary papular syphilis, which resembled so closely a pityriasis rubra pilaris, that at first the differential diagnosis was impossible. The lesions consisted of small conical pin-head papules, capped with horny scales. Itching, however, was not present, nor were the characteristic lesions on the dorsal surfaces of the fingers present. The lesions, at the end of two weeks, became papulo-squamous and anti-syphilitic treatment caused the eruption to almost disappear within a month.

Xeroderma Pigmentosum with Scrotal Tongue and Dental Malformations. M. G. ROUVIÈRE, *Annal. de dermat. et de syph.*, 1909, x, No. 8 and 9, p. 518.

Rouvière describes herein a case occurring in Audry's clinic in Toulouse, of xeroderma pigmentosum associated with changes in the tongue and teeth. The patient was a woman of twenty-one years, who dated her condition from her fourteenth year. Two sisters of the patient's, according to her statement, also had lesions similar to her own. The lesions consisted of small tumors, pigmented spots and telangiectases on the face and backs of the hands. The patient's teeth presented all stages of dental malnutrition; many were absent entirely, others stunted, malformed and carious. The tongue was deeply furrowed, flabby and presented the corrugated appearance of the scrotum. Rouvière does not believe the condition of the teeth and tongue to be purely coincidental, but associates it with the abnormal irregular development of the bucco-facial ectoderm.

Perifollicular Syphilides and Syphilitic Iritis. A. CIVATTE, *Bull. Soc. franc. de dermat. et de syph.*, 1909, No. 7, p. 292.

Civatte calls attention to the frequent coincidence of iritis and the perifollicular syphilides. At the hôpital Broca, in Paris, he has, for a long time, noticed the apparent association of these two conditions.

HEREDITARY AND VISCELAR SYPHILIS

By LUDWIG OULMANN, M. D.

Unusual Forms of Syphilis of the Liver. A. R. EDWARDS, *Jour. Mich. State Med. Soc.*, 1909, No. 11, p. 49.

Edwards describes the differential points between (1), hepatic gummatæ resembling cancer of the liver, which usually develops quickly, while gummatæ remain more stationary, and show less evidence of compression. He calls attention to Marcuse's observation that two-thirds of the cases of hepatic gummatæ exhibit early digestive disturbances. (2) He describes hepatic gummatæ resembling abscess of the liver; (3), gummatæ of the liver simulating tuberculosis, typhoid, pyæmia, malaria, etc.; (4), resembling gallstones; (5), syphilitic cirrhosis resembling alcoholic cirrhosis; (6), syphilitic pyelo-phlebitis. In his conclusions he states that one must always carefully consider the possibility of syphilis and to make every effort to exclude it before diagnosing hepatic disease.

Cerebrospinal Syphilis. S. D. INGHAM, *Med. Jour.*, Philadelphia, 1909, xiii, No. 2.

Ingham gives a brief résumé of five cases of cerebrospinal syphilis with necropsy, which showed (1), that all parts of the central nervous system were involved; (2), the fact that symptoms referable to the cord, as well as to the brain, often come on suddenly and are probably due to thrombosis; (3), that internal hydrocephalus was present in four cases and is evidently more common than is generally supposed. In considering these cases one is struck by the fact that microscopic lesions were found in structures other than those to which the symptoms had pointed. The writer gives in detail his views regarding the ætiology of internal hydrocephalus and states that his cases prove that a diagnosis of thrombosis of the vessels of the spinal cord should be made more frequently.

The Ætiology of Syphilis. E. HOFFMANN, *Dermat. Ztschr.*, 1909, xvi, No. 11.

This article contains a report of Hoffmann's lecture at the International Congress at Budapest. His conclusions are (1), that the

spirochæta pallida is without doubt the cause of syphilis; (2), the objections of Siegel are disproved, and no longer mentioned. The finding of the spirochæta pallida in the dental rootlets by Pasini is of interest as an aetiological factor in the production of Hutchinsonian teeth; (3), the demonstration of the organisms in primary and recent syphilitic lesions is of great value; it is also of value in secretions aspirated from glands, and in scrapings from the tonsils, where we may find the germ during the latent stage; (5), the good results of the sero-diagnostic test do not lower the value of the examination for the spirochæta pallida, especially in the beginning of the infection, when it is the only diagnostic index. The dark-field illumination, the quick-staining method of Preis, and the China-ink staining of Buri, produce rapid and accurate results and are of great service in doubtful lesions. While in the early stages staining is the superior method, it is in the later stages and in parasyphilitic affections that the sero-diagnostic test must be relied upon. (6), There has been no progress in our knowledge of the morphology and the development of the spirochæta pallida; (7), the pallida is usually found extra-cellular, in the lymph spaces, and in the connective tissue, but it is also found in the parenchyma, connective tissue cells, and in the leucocytes. (8), Phagocytosis is important in the destruction of the organism, which is able to enter the protoplasm, as for instance of the ovum, through its own motility. (9), The method of reproduction of the spirochæta pallida shows that it is a protozoan in nature. Hoffmann thinks it really belongs to a group between the protozoa and bacteria. (10), That there is no reason for the name of treponema pallidum instead of spirochæta. (11), Former experiments to cultivate the organism were negative. Mühlens, however, succeeded in cultivating from the extract of a lactic inguinal gland, a microorganism which cannot be distinguished from the spirochæta pallida. Vaccination with these cultures, however, failed to cause syphilis.

A Case of Tertiary Syphilis Terminating in Sudden Death from Paralysis of the Vocal Chords. R. H. J. BROWNE, *Lancet*, Nov., 1909, No. 4497, p. 1350.

In a patient whose history of syphilis dated back to 1902, partial aphonia developed besides ozæna and saddle nose. The aphonia passed away in two or three days. A week later dyspnœa and a rise of temperature occurred, which disappeared under specific treatment. A second and more severe attack of dyspnœa suddenly occurred a few weeks later which was followed by collapse and death. The necropsy showed, three inches below the larynx, an annular stricture and an ulcer which extended to the bronchi. The opinion of Browne is that the immediate cause of death was paralysis of the vocal chords.

Prognosis of Hereditary Lues. J. PEISER, *Therap. Monatsh.*, Sept., 1909.

The prognosis of hereditary lues is not as unfavorable in advanced infancy as it is usually considered. It is bad in cases of hereditary syphilitic infants of seven or eight months' gestation, with or without symptoms, but children who are born at the end of nine months, with normal weight and who do not develop symptoms of lues until after several weeks, present a very favorable prognosis when treated properly.

An Operated Case of Arachnitis Circumscripta Syphilitica of the Posterior Basal Cavity. E. UNGER, *Berl. klin. Wchnschr.*, Sept., 1909.

In a patient in whom the diagnosis of syphilis was positive, the following symptoms occurred, notwithstanding vigorous anti-syphilitic treatment: headaches, vomiting, dizziness, ataxia cerebralis, neuritis optica, diplopia, paresis of the right facial nerve, changes of the sensibility of the left and paresis of the right extremities. The operation showed a localized syphilitic meningitis with adhesions, and the formation of a cyst-like tumor of the right angulus of the pons cerebelli. After operation the patient, who was almost blind, recovered his normal power of vision. Unger therefore advises the operation in such cases when anti-syphilitic treatment proves insufficient.

Clinical Remarks on Syphilis of the Larynx. DEMETRIADE, *Dermat. Zeitschr.*, 1909, xvi, No. 2, p. 734.

Demetriade claims that a diagnosis of laryngeal syphilis is readily made. Beside the various local symptoms there are other signs and stigmata of tertiary lues, and almost always a characteristic perichondritis. Regarding other diseases of the larynx with which syphilis might be confused, the writer mentions ulceration and stenosis caused by tuberculosis. This, however, is very slow in its development, and is not common in late life. Carcinoma offers no possibility of confusion as the picture is so entirely different. In acute syphilitic stenosis Demetriade advises the application of mercury ointment to the throat and the inhalation of mercury vapor. This is to be followed by thorough and vigorous general anti-syphilitic treatment. In the experience of the author potassium iodide is of but little service. The author thinks that one of the most dangerous complications is a secondary pyogenic infection. In the discussion Scholz said that fibrolisin was of great value in these cases.

Visceral Syphilis. W. B. WARRINGTON, *Med. and Chir. Jour.*, 1909, iv, p. 87.

Of 1000 hospital cases with abdominal disturbances, there were only four cases where the symptoms were due to syphilis. Because of

these statistics Warrington concludes that syphilis of the abdominal viscera is of rather rare occurrence, but that a correct diagnosis is a matter of great importance. He reports a case of a woman of fifty-six years who presented an ill-defined swelling in the left side of the abdomen. There was no jaundice nor ascites. While she was obviously ill she was not cachectic and the tumor disappeared under injections of mercury. After a few months the patient had a recurrence of the pain and swelling and became cachectic. There was a mass in the left hypochondrium, the liver was enlarged, ascites was present, but no jaundice existed. A diagnosis of cancer was made, but the post-mortem examination showed a gumma of the liver.

Two other cases presented the clinical symptoms of chronic peritonitis and perihepatitis. In one case the ascites was serous and in the other chyliform. Another case presented marked anaemia, irregular fever and a leucocytosis of 27,000. The patient was a sailor and the possibility of a hepatic abscess was considered. The symptoms, however, disappeared under the administration of mercury. Splenomegaly in infancy, especially in the first six months, is always suspicious of syphilis.

Syphilitic nephritis occurs in the first two years after infection. There is a large amount of albumin but no diminution in the amount of urine, and casts and oedema are usually not noted.

In syphilis of the vascular system, Warrington describes myocarditis and syphilitic endarteritis of the coronary vessels; the mitral valve is very often affected. Syphilis of the pharynx occurs three times more frequently than that of the larynx; syphilis of the trachea and bronchi are rare, the frequency decreasing with the distance from the pharynx. There is always danger of stenosis in these cases and, not infrequently, tracheotomy becomes a necessity. Warrington has found syphilis of the lungs to be very rare. In syphilis of the nervous system he distinguishes between true lues and parasyphilitic affections. In the true syphilitic lesions he finds (1), a vascular change, notably endarteritis; (2), a diffuse round cell exudation, especially prone to affect the meninges; (3), a true gummatous formation, which is quite rare.

Among the thousand cases of syphilis at the hospital only fifteen showed true syphilis of the nervous system. This is a grave affection, but within certain limits, it yields well to treatment, especially in the early stages. In some instances vigorous anti-syphilitic treatment will entirely remove the newly formed tissue which caused the symptoms, while at other times it will only prevent the pathological conditions from increasing.

The syphilitic arteritis of the brain and spinal cord, which occurs early after the primary infection and occasionally in a later period, is found more in men than in women. The prognosis is fairly good in cases of thrombosis, but severe when haemorrhage occurs. Most of the cases of sudden paraphlegia (acute myelitis) are due to syphilis.

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THE ELASTIC TISSUE OF THE SKIN.*

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THE study of the elastic tissue of the skin has interested me for sometime and during the last ten years I have stained all my sections with one or more reagents capable of demonstrating this element of the corium. I regret very much that my material from Vienna—some 125 specimens—was not also prepared in this manner, but after being mounted on wooden blocks and soaking in alcohol for fourteen years I have found them incapable of receiving stains properly, owing to their impregnation with tannic acid. I regret this especially, because many of them were rare specimens, some of which I have been unable to procure in this country.

EMBRYOLOGY.

Mall¹, from whom this section of my paper is drawn, found that the earliest appearance of elastin could be ascertained by boiling to almost a jelly frozen sections of skin in one per cent. acetic acid, or in potassium hydrate, and then staining with magenta. This combined method demonstrates elastic tissue in much younger embryos than the simple staining reagents are able to do, for elastic tissue is more resistant than fibrous.

In very early foetal life the mesenchyme is composed of individual cells which increase rapidly in protoplasm, and then unite to form a dense syncytium. The protoplasm then grows faster than the nuclei divide, thus producing an extensive syncytium with a relatively small number of nuclei. There is now a fibrillar or main portion of the syncytium (the exoplasm) and a granular part which surrounds the nucleus (the endoplasm).

The elastic tissue develops in the middle of the exoplasm, the fibrils being extremely delicate at first, and anastomosing from the beginning. Elastin never develops by itself, but always in conjunction with some collagenous tissue, and this fact is true of adult life, as well of foetal existence.

* Read before the 33d Annual Meeting of the American Dermatological Association, June 3-5, 1909.

Elastin can be found in the aorta in embryos 4 cm. long. Here one notes that exoplasm of the connective tissue syncytium differentiates into two kinds of fibrils which give rise to the white fibrous tissue and the elastic tissue as well—in other words one cell produces both structures.

In human embryos of 22 cm. elastin can be demonstrated in the skin by the combined method of boiling and staining described above, but by the use of Weigert's elastic stain alone elastin cannot be found in embryos under 26 cm. long, *i. e.*, at the age of seven months. The elastic fibrils run parallel with those of the white connective tissue. In a foetus eight months old there is a marked increase of elastin which forms a basket-work mesh about the collagen. At birth, the embryo shows a still greater development of elastin, and in the infant of two months, elastin and collagen appear in about equal quantities. The elastin surrounds the white fibres, and is covered at its points of anastomosis with nuclei and endoplasm.

PHYSIOLOGY.

The elastic tissue acts as a regulator of the skin in conjunction with the muscular system and counteracts the torsion, stretching, and pressure of the integument. It also controls the gland secretion, the blood circulation, and takes part in nourishment and gas exchange. When connective tissue is produced it is rich in cells, and, as these disappear in the later metamorphosis into fibrils, elastin is of great value in counteracting this shrinking tendency of collagen. This function of elastin thus provides lymph spaces, and protects from undue pressure the nerves, vessels, and glands of the skin. Thus, damage to the elastic system is a measure of the total damage to the skin, a fact which renders the study of this structure of considerable importance in our pathological investigations.

HISTOLOGY.

For the study of normal elastic tissue I have chosen numerous parts of the body, but I regret that this investigation does not include the skin of the genitals or of the lip, tissues which I have not been able to obtain thus far from the living subject.

It will be noticed that I have not been able to demonstrate in my sections elastin in the epidermis. This fact has been described by certain students, but personally I have not found it possible to convince myself of its presence by any of my staining methods.

SCALP.

(Weigert-hæmatoxylin-Van Gieson.)

PAPILLÆ. Here elastin consists of numerous, somewhat wavy, long fibres running vertically upward on each side of the blood vessel. The capillary itself has no elastin within its lumen, or in direct contact with its outer wall. Some papillæ show very short elastic fibres running to the stratum germinativum but never into or between its cells and these fibres are given off at right angles from the vertical trunks. The interpapillary rete plugs show vertical fibres from below running toward the rete, sometimes reaching quite to the stratum germinativum but more often stopping short of actual contact, being separated by an intervening bundle of collagen. There are frequent spaces, however, where these vertical fibres do not appear, and these rete plugs are devoid of elastin. The distribution of these papillary and subpapillary elastic twigs is similar to that of the superficial vessels. There is a horizontal layer of elastin corresponding to the situation of the subpapillary vessels from which these vertical fibres are derived—above this all main fibres are vertical, while below all are horizontal in a general sense. In these upper strata the elastic fibres are sparse or entirely wanting about the capillary twigs. Below this upper horizontal layer lies a narrow zone of coarse, abundant, horizontally lying elastin, but still further down, around the numerous follicles, the fibres run for the most part vertically.

FOLLICLES. Extending along the sides of the hair follicles is a limiting, and continuous zone of elastin. In the more superficially lying follicles the elastin seems to stream up in parallel, wavy, delicate fibres from below and then separates to each side of the follicle forming a closely fitting envelope. In the deeper follicles which have their base in the panniculus adiposus elastin does not have this peculiar distribution, but forms a complete envelope around the base and sides of the follicle and ascends in parallel fibres from its apex. About a very young hair papilla, deep down in the corium, there are elastic fibres which divide at the base of the epithelial structure and run up as a succession of dots (cross section) on each side of the cone, almost meeting again at the apex.

NERVES. Several bundles of nerves are seen in the depths of the section, but no elastin appears in any connection with these structures.

PANNICULUS ADIPOSUS. There are apparently no elastic fibres in this area of the skin.

SEBACEOUS GLANDS. The sebaceous glands have a broken and less generous envelope of elastin about them, and when compound the elastic fibres can be seen accompanying the fibrous septa.

SWEAT GLANDS. Fibres of elastin completely encircle each gland, but are never seen in their lumina.

VESSELS. There is a very abundant tunic of elastin in the lumen, but the external coat does not appear in these sections.

AXILLA.

(Weigert-hæmatoxylin-Van Gicson.)

ELASTIN, in its distribution is very similar to that of the scalp, perhaps slightly less abundant, however, in the papillary and subpapillary layers. Here we have a particularly favorable field for the study of the association of elastin with the sweat and hair systems. (*vide* scalp.)

CHEST.

(Weigert-hæmatoxylin-Van Gicson.)

ELASTIN shows no perceptible difference from that of the scalp except it is distinctly less in amount in the papillary and subpapillary zones.

BACK.

(Weigert-hæmatoxylin-Van Gicson.)

ELASTIN is very abundant everywhere and well differentiated in all its normal placements. There is a suggestion of elastic fibrils in the interstices of a muscle bundle but only a few, delicate, short fibrillæ appear, however, and perhaps these fibrils are connected with the overlying collagen rather than with the muscular tissues. Efferent sweat ducts are surrounded as are the sweat glands. The hair follicles show a trace of elastin around them, but probably only in connection with the adjacent collagen. A very abundant subpapillary layer is present.

It is noticeable in all these sections that elastin in the very middle layers of the corium becomes smaller, more curled, and rather more abundant in its fibres than throughout the corium as a whole.

ABDOMEN.

(Weigert-hæmatoxylin-Van Gicson.)

Here the papillæ are prominent—wide and high. Long straight filaments of elastin run upward from the comparatively deeply lying, subpapillary elastic layer. The major part of the corium contains abundant elastin lying in the interstices of the collagen and in the form of short, coarse fibrils. In the lowest layers, however, as in the highest, the elastic tissue becomes rarer and finer in its structure. Elastin is very perfectly represented here in association with all the adnexa of the skin, *i. e.*, follicles, sweat and sebaceous glands and ducts, vessels, nerves and fat.

PALM.

(Weigert-hæmatoxylin-Van Gicson.)

PAPILLE. The fibres are quite abundant and consist of parallel, partly straight, partly wavy fibrillæ reaching to the very top-most limit of the fibrous tissue and terminating exactly where the epidermis begins. Where the papillæ are long and narrow the fibrillæ are straight throwing off at frequent intervals horizontal terminal filaments, and when a vessel is evident the fibrillæ stretch along the epidermic border, avoiding the central vascular space. The vessel itself shows no elastic structures. Where the papillæ are broad the elastin forms a network of anastomosing fibrillæ, waving and horizontal, as well as vertical, in direction. These broad papillæ seem to be proportionately better supplied with elastic structure than their narrower neighbors.

SUBPAPILLARY ZONE. Immediately beneath the epidermis there is abundance of elastin consisting of a narrow network of anastomosing fibres and terminating in one of two ways. Where the corium touches the epidermis in its usual density the terminal filaments stream toward the stratum germinativum and end abruptly as more or less parallel, wavy lines. Where the corium is somewhat rarified, contiguous to the rete, the terminal filaments consist of horizontal lines separating rete from corium. Thus in neither of these methods of termination can one note any definite penetration of elastin into or between the epidermic elements.

LAYER OF THE SUPERFICIAL HORIZONTAL VESSELS. Below this immediately subepidermic zone the elastic structure grows perceptibly rarer and some larger elements appear. The smaller fibrils are

in connection with the vessels, some lining the interior, others outlining the exterior, and again others, in some instances, appearing inside and outside of the vascular walls. When in connection with the fibrous tissue, the elastic fibres are very apt to lie along the outside of the individual isolated collagenous bundle or in the interstices of a more compact mass, but in many cases the elastin runs irrespective of adjacent structures.

MID-CORIUM. Here elastin is not abundant, and the fibres consist of varying lengths from a round dot to long straight filaments. The relationship of elastin to collagen is the same as described above in connection with the upper corium.

VESSELS. Here elastin is relatively more abundant and may be seen lying within the intima or without the adventitia.

SWEAT GLANDS. Around practically every sweat gland there is a continuous envelope of thin, faintly staining elastic fibres. Elastin is never seen between the sweat cells, or as a lining membrane.

DEEP CORIUM. In the area of the corium which supports the deeper vessels and the sweat glands the elastic fibres abruptly reach much larger proportions. The fibres are long or short, usually the latter, and appear as serpentine or rod-like, thick, and darkly staining filaments.

FAT CELLS. Around the conglomerate masses of fat cells large, scattered fibres of elastin are evident, while this same element forms one of the boundaries between practically all of the individual cells.

THIGH.

(Weigert-hæmatoxylin-Van Gieson.)

ELASTIN as a whole is very small in amount. In the papillæ there are one or two fine fibrils which make their way to the summit of the cone and stop absolutely at the epithelial boundary. There are no offshoots from the main branches to the lateral walls of the rete.

Below the papillæ there are sparse, delicate, vertical filaments but no horizontal fibres separating rete from corium. A short distance below the epidermis there are occasional horizontal fibres from which these vertical fibrils arise, but these are not continuous and are usually single. There is no suggestion of a well-marked layer.

Throughout the entire depth of the corium elastin exists as short, horizontal fibres or even dots—the elastic element being very sparse in amount. It frequently bounds the follicles, but not univer-

sally, and it appears in limited amounts in connection with vessels and sweat glands, but in the latter relation it is distinctly rare, while around the ducts it is practically absent. There are a few dots of elastin associated with an arrector muscle.

HEEL.

(Acid Orcein.)

The amount of elastin in the subpapillary and papillary layers is considerable. In the middle corium elastin is not very abundant. In the deep corium, above and within and below the panniculus adiposus the amount is strikingly large, and it seems evident that there is an envelope of elastic tissue about the individual fat cells.

In the papillary layer elastin occurs in numerous, sharply stained, vertical, waving fibres but no horizontal offshoots are visible. There is also a generous horizontal layer hugging the stratum germinativum.

Elastin occurs in apparently normal amounts within the vessels and without the sweat glands.

STAINING METHODS.

In early histological days pathologists depended upon the maceration of anatomical material and the use of hydrate of potash and of acetic acid for the demonstration of elastic tissue. Then Ewald introduced the use of pepsin and trypsin. But in 1886 these coarse but effective methods gave way to the use of dyes which differentiated the various structures without necessitating their partial destruction.

Unna and Herxheimer were the initiators of these tinctorial methods and in 1886 they employed respectively dahlia and iron-hæmatoxylin. Lustgarten in this same year recommended Victoria blue.

In 1887 Martinotti followed with saffranin, Taenzer with fuchsin, and Manchot with fuchsin and sugar water. In 1889 Taenzer and Unna made the valuable discovery of the selective action of acid orcein. The following year, 1890, brought forth several new suggestions—Heitzmann, carmine; Köppen, gentian violet and carbolic acid; and Herxheimer, anilinwassergentianviolett to which Beneke added the IKI solution. From then on, contrast stains were introduced and in 1891 Burci added aurantia to the carmine or

haematoxylin method; and in 1892 Wolters introduced vanadium and aluminum in conjunction with the haematoxylin stain, and Schütz carbol-fuchsin and methylene blue. In 1895 Mallory published his phosphomolybdic acid-haematoxylin method. Three years later, in 1898, Weigert discovered the value of acid fuchsin, resorcin and liquor ferri sesquichloride—a stain which is to-day considered by many investigators to be the very best at our disposal. In 1904, or before, Benda combined acid orcein with eosin and toluidin; and Joseph, Weigert's stain in combination with lithium-carmine or with Van Gieson's compound. In 1908 Rodler added to the Weigert stain aqueous saffranin, water-blue and tannin; and, finally, in 1909, Neuber has asserted the value of acetic acid-orcein over the standard hydrochloric acid-orcein, claiming that the former can differentiate between old and young elastic fibres.

Several of these rather complicated methods have been employed in staining my sections, but the best results have been obtained by the use of acid orcein plus some good counter-stain, and by the following method (a modification of Joseph's) which gives very clear and valuable pictures:

1. Permanganate of potash.....1-400 10 minutes.
 2. Oxalic acid5% 20 "
 3. Water
 4. Weigert's elastic stain.....5% 12 hours.
 5. Water (acid alcohol if necessary).
 6. Alum-haematoxylin
 7. Water
 8. Van Gieson's stain..... 5-10 minutes.
- 95% alcohol, absolute alcohol, xylol, and balsam.

Personally, I prefer acid orcein (12 hours or more) as a stain for elastic tissue because it seems to me the most searching and because it enables one also to detect the presence of elacin and collagen as well. For the demonstration of elacin I think the most striking pictures can be obtained by the simple haematoxylin-eosin method, and to my mind this stain is also perhaps the most delicate one.

PATHOLOGICAL OBSERVATIONS.

The following table presents the elastin and elacin content of my collection of dermatological slides. There are, unfortunately, a great many sections stained only by haematoxylin and eosin which

do not provide any clue to the amount and distribution of the elastin. I have explained before my inability to employ further staining methods in these specimens, but I have included them in this list because they demonstrate the presence or absence of elacin.

ACNE ROSACEA.

Hæmatoxylin-eosin. Elacin absent.

SENLITY.

No. 36. Nodule, resembling acnitis, from the cheek of a man about sixty years old.

Hæmatoxylin-eosin. Just below the subpapillary layer, there are large areas of elacin consisting of swollen, almost amorphous bundles containing scattered connective tissue nuclei. These basophilic masses lie between the numerous hair follicles but are always separated from them by quasi-normal collagen.

Phosphotungstic acid-hæmatoxylin. In the areas of elacin no normal collagen appears, but in other parts of the section there are fine and coarse, tortuous collagenous bundles and here and there in the deeper strata a few short convoluted elastin fibres. Elastin, therefore, is totally wanting in the superficial layers of the corium and present to a minimum degree in the middle and deeper zones.

As this papule occurred in an elderly man who had spent his life in the open air and as these changes conform more to our conceptions of a senile skin, rather than to those of acnitis, I think we should regard them in this light.

Weigert-hæmatoxylin-Van Gieson. This method stains elacin and here one sees the degenerated tissue as great, swollen, almost coalescent fibres almost excluding collagen from its neighborhood. There is below the rete a zone of collagen separating elacin from the rete and from the follicles.

Below this layer there are foci of cellular invasion and areas of collagen. In the former tracts elastic tissue is absent, in the latter there is a diminished quantity of normally coarse, rather abnormally convoluted fibres, plus normal, elongated fibres.

In the middle layers of the corium elastic tissue has disappeared from the blood vessels which form the centre of the cellular areas.

In the deepest layers blood vessels and sweat glands, where not totally obliterated by the cellular process, preserve to a certain extent their elastic elements.

Acid Orcein. Next to the rete, and running up the papillæ there is a normal amount of delicate elastin. Below this subrete layer is a narrow zone of collagen free from elastic elements. Then come scattered large foci of elacin composed of deeply staining purple-black, swollen fibres, devoid of collagen. Below these areas elastin appears again in normal amounts; and appears in conjunction with the vessels, sweat glands and in particular abundance immediately around the follicles and sebaceous glands which are enclosed as in a sheath.

For the most part the cellular foci are free from elastic elements, but there are a few exceptions to this general statement.

ADENOMA SEBACEUM.

Hæmatoxylin-eosin. No elacin.

AMYLODOSIS.

Hæmatoxylin-eosin. No elacin.

Acid orcein. An unusual picture. The delicate papillary fibres are sharply preserved and appear in unusual abundance. The same exuberance of growth is marked in the fibres associated with the interpapillary twigs, where they form a horizontal boundary between rete and corium. Elastin is especially abundant around the follicles and within and without the vessels. The mid-corium exhibits a well-emphasized skeleton of elastin, but in the deeper layers elastin is faint and very scanty, except in connection with the very numerous sweat glands. Here, as happens in amyloidosis, the epithelium of the glands is almost gone, and appears as ragged, amorphous masses surrounded by comparatively well-preserved rings of elastin. In fact these elastic rings are practically all that is left of these structures in many places.

ANGIOMA.

Nos. A. B. Hæmatoxylin-eosin. No elacin.

No. 125. A nodule from the nose of a girl. Hæmatoxylin-eosin. No elacin.

Acid orcein. The epidermis is reduced by tension (?) and pressure from below to a mere suggestion of itself. In the upper corium there is merely a rarefied reticulum with papillæ supporting a moderate infiltration of lymphocytes; in the mid-corium lies the tumor consisting of numerous small vessels and in the depths of the section there are closely approximated larger vessels.

In the first stratum elastin is practically non-existent, but there is an occasional, almost invisible, delicate fibril. In the second zone there are occasional groups of ascending, faintly staining, delicate, wavy fibrils, while in the third area elastin is normal in amount and surrounds the sweat glands and lines but does not enclose the vessels.

ANGIOMA CAVERNOSUM.

Hæmatoxylin-eosin. No elacin.

ANTHRAX.

Weigert bacterial stain. Elastin is absent from the papillary and subpapillary layers. Below these strata there are foci where the elastic fibres seem to predominate over the fibrous elements and appear as short wavy, normal fibres. There are other and larger areas where elastin appears as an interlacing network of rather faintly staining fibres, interweaving the collagenous structures and surrounding the sweat glands which are abnormally abundant in the section.

The panniculus adiposus is without elastic elements. As a whole elastin is well preserved, but irregularly disposed in the corium.

ATHEROMA (WEN).

A. Hæmatoxylin-eosin. No elacin.

No. 85. Acid orcein-polychrome blue-orange-tannin. Immediately adjacent to the rete, which has been flattened out by pressure from the wen below, is a narrow band of delicate elastin and this same elastic substance forms a wider band completely surrounding the capsule of the wen. Below the former narrow zone is a wide area full of basic staining elastin (elacin), the individual fibrils of which are not swollen or coalescent but appear as normal, rather S-shaped or elongated fibres. Collagen is exceedingly sparse in this subpapillary layer, but deeper down in the sections collagen is present in normal amount and appears as buff-colored fibres interspersed with delicate plum-tinted elastin fibrils smaller in volume and numbers than what is normally seen in these regions.

Cellular invasion is slight, but where present elastin is wanting.

CARBUNCULUS.

Hæmatoxylin-eosin. No elacin.

(*To be Continued.*)

A FEW CONSIDERATIONS ON A CASE OF ERYTHRODERMA SQUAMOSUM: (PARAPSORIASIS).*

By A. RAVOGLI, M. D., Cincinnati.

DERMATOSES of squamous type and of hybrid appearance have been often reported, and recently have been grouped together in a class of their own. Török,¹ under the head of "exfoliativen Erythrodermien," grouped several forms of scaly affections following the ideas of Besnier, who had already established the group of érythrodermies exfoliatives. The characteristics which were assigned to these affections consisted in the diffused redness and an exfoliation of the epidermis. From these characters the group of the exfoliative erythrodermias showed us one extreme in the malignant and fatal form described by Hebra under the name of "pityriasis rubra," and in the other extreme in the benignant desquamative form described by Wilson as "dermatitis exfoliativa." Between these two forms, so different in character and nature, many other chronic and persistent eruptions were to find a nosological place, belonging to the scaly type, benign in their course. Unna,² with the coöperation of Santi and Pollitzer, described two cases of a peculiar scaly eruption different from psoriasis, which they referred to the parakeratoses of Auspitz, under the name of "parakeratosis variegata." This nomenclature was also adopted by Anthony,³ who reported a similar case in 1906 as parakeratosis variegata. Brocq,⁴ with the description of a scaly eruption as "érythrodermie pityriاسique en plaques disseminées," opened a field for other observations on these important dermatoses, which was entered by White,⁵ Ravogli,⁶ and others.

In the same year Juliusberg⁷ reported cases of the same dermatosis under the name of "pityriasis lichenoides chronica." Cases of the same kind had been reported by Neisser⁸ as "lichenoides und psoriasisartiges Exanthem," and by Jadassohn⁹ as "dermatitis psoriasiformis nodularis."

An extensive and exact literature on these forms of diseases was given out by Riecke.¹⁰ Corlett¹¹ in his exhaustive article on parapsoriasis, adopted entirely the ideas and the nomenclature of

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Brcq, who proposed the name of "parapsoriasis" for the entire group of these affections, and made the following three divisions:

- Parapsoriasis en gouttes.
- Parapsoriasis lichenoide.
- Parapsoriasis en plaques.

The first two groups are represented by those varieties which have been described as pityriasis lichenoides, parakeratosis variegata, lichen variegatus, etc., while the érythrodermie en plaques represents the third group. It is to this last group that we refer the case which we now report.

P. S., thirty-seven years of age, was admitted to the dermatological service in the City Hospital on account of an extensive eruption. He is a man of strong physique, well built, with dark hair; Irish; single. He has always worked in an ice-cream factory. When a boy, he came, together with his family, to America from Switzerland. His mother is living and in good health, his father died of heart trouble. He has two sisters and one brother, all enjoying splendid health. At the age of twenty-three he contracted a chancre, which was followed by mild constitutional symptoms. He took treatment for a few months, mostly pills internally. For many years he never had any syphilitic recurrence. Six years ago he had typhoid fever from which he recovered perfectly. Three years ago he had an attack of gonorrhoeal urethritis. In 1905 an eruption developed on the forehead in the form of small papules covered with scales, which spread to the head and face, and gradually invaded both arms on the extensor surfaces, and then the thighs and legs. The eruption was accompanied with little itching. The patient was then admitted into the hospital where he remained eight months under treatment. He left somewhat improved, as the eruption had left his face and he could return to his occupation. In November, 1907, he suffered another relapse of a more severe nature, the eruption covering the body in different patches.

STATUS PRESENS. The patient was again admitted into the hospital February 25, 1908. He was fairly well nourished (Fig. 1). His face was covered with eruptive patches formed by small red papules grouped together, in some places nearly coalescent. These patches extended from the brow to the whole forehead and part of the scalp. Patches formed by thick papules extended to the temporal regions. The nose and cheeks were affected in the same way and showed masses of whitish, dirty, greasy scales. The

bearded portion of the face was also a mass of scales, which were easily removed and showed papules underneath. From the face the eruption extended to the neck anteriorly and posteriorly, small papules being grouped together and covered with epidermic scales. Only a few papules were scattered about on his chest. The arms were badly affected on the extensor surfaces and the eruption in plaques extended to the backs of the hands. (Fig. 2.) The eruption consisted of small papules, red in color, roundish or oval, of the size of a hemp seed, coalescing. At the edges of the spots they formed semicircular lines. Epidermic masses in the form of thin bran-like scales covered the whole surface. The scales were not brilliant, but were strongly adherent in the form of shreds, and could not, as in psoriasis, be removed easily. After the scales were partially removed by hard rubbing on the surface, no punctiform haemorrhages were perceptible, and the papules were red and brilliant.

The finger-nails were badly affected. Their appearance was chalky and dry, and they were often broken into scales. The color of the nail had lost its brilliancy, and their shape was greatly altered. They were converted into dry, thick, bulky masses, broken in several places. The plate of the nail showed some atrophic roundish depressions, which corresponded to papules which had been involved in the nail bed. (Fig. 3).

The abdomen, as well as the chest, showed scattered papules, not numerous, reddish in color and covered with epidermic scales. The thighs and the legs were covered with thick masses of whitish, dirty epidermis, which at the first glance looked like rupioid crusts. The epidermic masses were only superimposed on the skin, and they covered a surface consisting of groups of small red papules grouped together forming the patch. The papules were also small, red, separated by small furrows of the epidermis, dry, with no bleeding and no exudation. Neither did they cause itching nor subjective discomfort. These patches, varying from the size of a twenty-five-cent piece to that of a silver dollar, were scattered on the thighs, the legs, and the backs of the feet. The toe-nails were affected in the same way as those of the fingers. When the surface was cleaned of the epidermic masses, the papules underneath appeared well defined. They were small, from the size of a hemp seed to that of a split pea. Intensely red in color, they were slightly elevated above the level of the normal skin, grouped together forming round patches. The epidermis covering the patches was whitish, strongly adherent, and of a ragged appearance. The scales did not have the brilliancy

of those in psoriasis, nor could they be removed by scratching, as shreds of epidermis remained adherent to the papules.

Subjective symptoms have been absent, the patient never complained of itching nor of a burning sensation. His general nutrition was well maintained. His appetite and his sleep were good.

The physical examination of the patient did not reveal any important symptoms. The tongue, slightly coated, showed no signs of syphilis. The palate arch was somewhat reddish brown. The lymph glands of the submaxillary and of the cervical regions were scarcely perceptible and those of the groins also. The organs of the thorax, and those of the abdomen did not show any abnormal condition. The urine was found normal. An examination of the blood gave the following results:

Large lymphocytes	8.7%
Small lymphocytes	27.0%
Polynuclear leucocytes	58.9%
Transitional forms	4.0%
Eosinophiles	8.0%
Mast cells	16.0%

This, with the exception of an increase in small leucocytes, and in eosinophiles, can be considered normal. The diagnosis was between psoriasis, papulo-squamous syphilide, and erythroderma squamosum (parapsoriasis). With the history of syphilis the first diagnosis was for a hybrid form of papulo-squamous syphilide. The patient was treated with massive injections of gray oil, large doses of potassium iodide, local bathing with bichloride of mercury, 1 to 2000, calomel ointment applications on the eruption, and emplastrum hydrargyri on the finger- and toe-nails. The result was bad. The man lost his appetite, lost in weight, got neurasthenic, and it was necessary to stop this treatment, fully convinced that the eruption had nothing to do with syphilis, from which he had suffered fourteen years previously. From the formation of the patches consisting of small lichenoid papules, the diagnosis of psoriasis was eliminated, and there remained that of erythroderma squamosum or parapsoriasis. Indeed the general characters as established by Brocq were present; long duration, little influence on the general system, absence of pruritus, superficial process, abundant desquamation, and very little benefit from therapeutic application.

HISTOPATHOLOGY. A piece of affected skin was removed, hardened and stained according to different methods for the different histological elements to be found. (Figs. 4 and 5). The epidermis is increased and thickened. The stratum corneum shows loose epidermic scales, and it is easily detached from the underlying strata. The scales consist of dead epidermic cells with unstainable nuclei. The stratum lucidum is also increased. The stratum granulosum is hypertrophic, and the cells which constitute it are enlarged; they show a cubic or rhomboidal shape containing large, well-stained nuclei. In this layer mitoses are abundant. The columnar stratum shows the same increased condition as the other layers. The cells have lost their normal appearance and the epidermic appendages are deeply inbedded in the papillary layer, which is greatly enlarged. The papillæ are rather elongated and some are also decussated. From one papilla others are seen sprouting. Between the papillæ (Fig. 5) an abundant infiltration of inflammatory cells is present, which is mostly perivascular. The blood vessels are enlarged and congested, and they can be seen in this condition in the papillæ and in the derma. The congestion is not limited to the superficial vessels of the papillary layer, but also reaches those of the deep circulation in the corium. The connective tissue containing infiltration elements shows layers of plasma cells, which contain two or three nuclei. The elastic fibres are fairly maintained in spite of the infiltration, but they are not so wavy-like as in the normal condition.

The lymph spaces are enlarged and leave loculi, empty spaces, showing that the skin was œdematosus. In the superficial layer of the derma, a quantity of small-cell infiltration also surrounds the hair follicles, showing a chronic inflammation. No infiltration is seen in the coil glands in the deep layer of the corium, and they are well maintained, although somewhat enlarged.

The entire pathological feature of the erythroderma consists in the congestion of the blood vessels, perivascular cellular infiltration, œdema, alteration of the nutrition of the epidermis and as a result the exfoliation of the horny layer. These pathological alterations make a good distinction between erythroderma and pityriasis rubra (Hebra) and pityriasis rubra seborrhœica. In these last-mentioned affections there is only a mild cellular infiltration in the papillary layer and a marked adherence of the epidermic scales. Pityriasis rubra pilaris and ichthyosis are forms of hyperkeratosis, while erythroderma is only a parakeratosis. In pityria-

sis rubra pilaris the enlargement of the pores is very pronounced, forming hard conical papules, but in erythroderma there are flat papules covered with bran-like scaliness.

In reviewing the reports of the histopathological lesions of this disease, we find that the majority of the authors agree on this point, that the process is limited to the epidermis and to the superficial layer of the derma. A form of chronic inflammation of the derma and papillary layer is the cause of the acanthosis and the parakeratosis. Unna, Santi, and Pollitzer found, in the epidermis, enlargement of the stratum spinosum, and in the derma, enlargement of the blood vessels, oedema and perivascular infiltration. The same main alterations were found by Pinkus, Juliusberg, Bucek, White, Colcott Fox and Mac Leod, Riecke, Corlett, and ourselves. It is in all probability the inflammatory process of the corium and of the papillary layer, which causes the alteration of the epidermis producing parakeratosis. Brocq¹² maintains that the anatomo-pathological process of parapsoriasis is the same as that which is found in psoriasis. Yet both forms of disease are too different in their clinical appearance to be confused. The clinical and histological characters prompted Jadassohn, Neisser and later Juliusberg to describe this affection as a lichenoid-psoriasisiform one, which means that it is not psoriasis, nor pityriasis, nor a form of lichen.

The primary lesion of the eruption is a papule, small-sized, round and red "which gradually becomes as large as a split pea or even larger. The papules remain for a long time, but they become flattened, and lose their vivid color. They are covered with thick epidermic scales, more adherent than in psoriasis, and when the scales are removed, they show a thin, brilliant, red surface, moist, but without exudation or punctiform haemorrhages. In most of the cases the papules are scattered in the different regions of the body without showing a special predilection, or a determined disposition. In some cases, as in ours, the papules have grouped themselves, showing a certain confluence and thus forming eruption plaques. This disposition has prompted Brocq to place these cases under the nomenclature of érythrodermie en plaques. The palms of the hands are usually free from the eruption, but in our case the finger and the toe-nails were affected. In our case, as in the case of Rille,¹³ the scalp was badly affected. Formerly it was believed that the absence of the eruption on the scalp could be used as a character for the differential diagnosis of this disease.

It has been thought that some regressive changes take place in the tissues involved in the papule. Jadassohn,¹⁴ Juliusberg,¹⁵

Kreibich,¹⁶ Himmel,¹⁷ and Pinkus,¹⁸ have referred to some whitish atrophic spots, which remain as stigmata of the involved papules. In these white spots there are still present epithelial projections, and in the derma infiltrating cells and protoplasmic elements, with some diminution of the elastic fibres. The longer the papules last, the more influence they seem to have on the tissues. Scherber,¹⁹ in his case of pityriasis lichenoides chronica, pointed out the papules of the legs and of the thighs to be of a much more livid color and covered with thicker scales. According to Finger, pityriasis lichenoides chronica never heals up, and does not show regressive changes. As it progresses old papules disappear and new ones take their places. It seems that this affection diminishes in summer to reappear in new crops in winter.

AETIOLOGY. So far the entire group of parapsoriasis is entirely shrouded in darkness as far as concerns the possible causes producing it. Nearly forty cases have been reported and in most of them the disease made its appearance without any special assignable cause. In some cases of Jadassohn, Róna, and Brocq, as well as in our case, the patients had been syphilitic. In another case of Brocq the patient had suffered from tuberculosis and diabetes. In two cases of Brocq the eruption had appeared after a psychical emotion. In one case of Juliusberg the eruption had followed an attack of measles. Indeed it is impossible to see what relation may have existed between these accidental diseases and the production of this stubborn and persistent eruption. In reference to syphilitic infection in the case of Jadassohn the patient had been infected five years previously; in the case of Brocq six years, and in my case fourteen years. In their cases as well as in mine the specific treatment did not show any beneficial effect. According to Civatte "Les parapsoriasis de Brocq," tuberculosis can with some probability have some influence in the production of these eruptions.

Colcott Fox and Mac Leod, Buek, and Corlett see as a possible causation a disturbance in the vasomotor nerves. The dilatation of the blood vessels, the œdematos condition of the tissues, the small-cell infiltration, result of a mild inflammation, are sufficient to cause decay and death of the epidermic cells and consequently parakeratosis. Moreover, the recurrence of the affection, the symmetrical disposition of the lesions, and the little or no influence of the remedies on the disease, make it appear as a possible vasomotor neurosis.

The idea of a possible parasitic origin of parapsoriasis, as mentioned by Unna, has been abandoned. The non-contagiosity

and the rarity of the affection, the absence of any parasitic elements, and the lack of any influence of the anti-parasitic remedies are sufficient arguments to disprove this theory.

DIFFERENTIAL DIAGNOSIS. Parapsoriasis, as it is, to use the expression of Bucek, "A mixtum et compositum of psoriasis, of pityriasis and of lichen, does with good reasons offer some difficulty in the diagnosis." The author insists in the differences shown by this disease in reference to psoriasis, lichen ruber planus, pityriasis rosea, eczema seborrhœicum, herpes tonsurans, etc. Time will not allow us to go over all these diseases, but we will only mention lues. Róna²⁰ showed two cases under the name of "lichenoid syphilide" in two women, where a differential diagnosis was very difficult, and the diagnosis of lues was based on an ulcerated papule on the labium and polyadenitis. Ehrmann reported some cases of "lichen formige Syphilides" where the diagnosis was made only from the accompanying symptoms and from the action of the specific treatment. A case of lichenoid syphilide was kindly referred to us by Dr. Lydston of Chicago. The patient was a man of forty who had been infected fifteen years previously, and had shown a constant papular eruption ever since the second year of the disease. The eruption, consisting of red papules of the size of a split pea covered with thin scales, was scattered on the chest, abdomen, arms and thighs. No itching nor discomfort accompanied the eruption, and to such an extent was this so, that the patient used to say that he knew of the eruption only by looking at it. Injections of a one per cent. solution of corrosive sublimate caused the eruption to disappear. In syphilitics with an old lues, we have seen small papules scattered on the chest and abdomen. They were very stubborn, and deep enough to cause atrophic spots in their places. These cases could be very easily mistaken for pityriasis lichenoides chronica. In such cases, however, we find the patient badly run down in his general health, and other symptoms of visceral or of bone syphilis accompany this eruption. In our case, although the eruption had no resemblance to a papular syphilide, and more closely resembled an old psoriasis, yet mercurial treatment was liberally given, without any result.

TREATMENT. Injections with a ten per cent. solution of cacydylic acid were the only means with which we succeeded in producing a visible improvement in the eruption. The injections were repeated every other day. Externally an ointment of resorcin and salicylic acid has been of some benefit. The patient became well

enough to leave the hospital and resume his occupations for a while, but he has returned to the hospital in a worse condition than before.

In conclusion, after studying this obscure disease in its hybridity, we cannot refuse entirely the opinion of Civatte that tuberculosis may have some influence in the production of the eruption, and that with successive studies and with more observations the disease may finally be classed among the tuberculides.

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PLATE XXVII.—To Illustrate Article by DR. A. RAVOGLI.

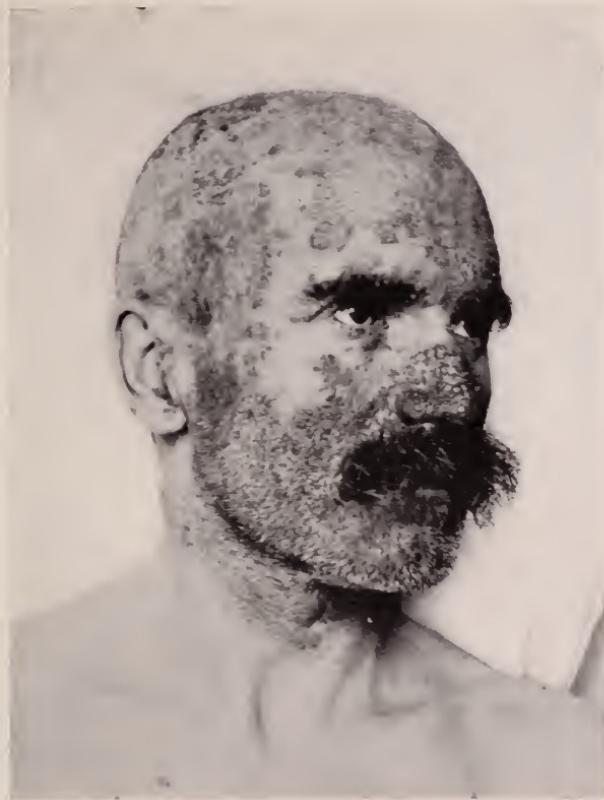


FIG. 1.



FIG. 2.

PLATE XXVIII.—To Illustrate Article by DR. A. RAVOGLI.



FIG. 3.



FIG. 4.

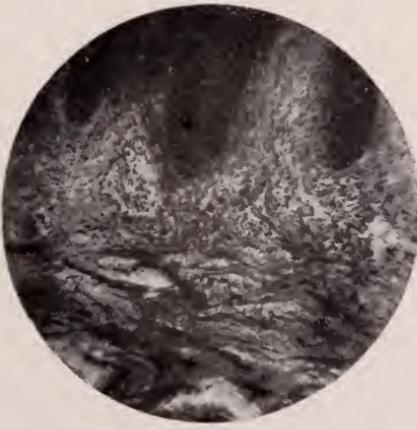


FIG. 5.

DISCUSSION.

DR. LOUIS A. DUHRING said he had seen perhaps two or three of such cases that he had been able to follow for some time, and basing his views on personal observations, he did not hesitate to express the belief that syphilis was not concerned with this rare form of cutaneous disease. He had been disposed to think from the cases that he had observed that they had but little or perhaps nothing in common with psoriasis except the symptom of scaling. Therefore, he regarded parapsoriasis as a somewhat unfortunate term to apply to them. The other terms that had been employed seemed to him as being more appropriate and significant. They had probably nothing to do with syphilis and very little with psoriasis; still, we had in these cases a rather distinct clinical manifestation which was worthy of a name. It was difficult to classify them, but he thought they might perhaps best go under the name of erythroderma squamosum, which to be sure did not mean much as to their nature or even as to their symptoms. We had to deal with a chronic scaly erythroderma, characterized by redness and a scaliness of a peculiar character.

Dr. Duhring said that in the cases that had come under his observation, he had failed to observe any resemblance to lichen, and he did not see why that term had been employed, because the cases, at least those he had studied, were of a distinctly squamous and not a papulo-squamous type. The reader of the paper, Dr. Duhring remarked, had given us an instructive paper representing a group of cases about which we knew but little either from a clinical or any other standpoint beyond the lesions; and from a therapeutic point of view he had not been able to cure or even materially benefit them. One of Dr. Duhring's cases, a former Senator from a western state, he had followed for some years, and he had been unable to comprehend the case. Another somewhat similar case, a gentleman, he had had under observation for eighteen to twenty years, and he had been unable to accomplish anything in the way of distinct relief or cure. We might therefore say that in this affection we had to do with a group of cases that nearly always proved extremely intractable to treatment, and in that respect, in addition, they differed from psoriasis and allied forms of squamous inflammation. They were certainly entitled to careful study, especially as to causes of probable internal origin.

DR. JAMES NEVINS HYDE said that the few words he had to say in the discussion of this paper could be expressed largely in the form of negations. His experience with this form of eruption was limited to six or eight cases. One of them, to which he had already referred at previous meetings of this Association, came under his personal observation in Chicago, and was identified by Unna. If he were called upon to

decide which was the dangerous diagnosis for a dermatologist to make, he would say that it was érythrodermie en plaques disseminées. The photograph that was passed around by Dr. Ravogli did not bring to the speaker's mind any of the cases he had seen, and he could recall several instances where this diagnosis was made which proved eventually to be cases of mycosis fungoides. The patient referred to by Dr. Duhring, a distinguished former Senator from a western state, where the diagnosis of érythrodermie en plaques disseminées had been made abroad, had been seen by Dr. Hyde within the past two or three months exhibiting unmistakable signs of mycosis fungoides. In any case where there was any suspicion of syphilis, the Wassermann test should surely be made. In any case where a tuberculous element was suspected, the tuberculin test should be made. In employing these various tests, and keeping the patients under careful and long observation, the diagnosis should be assured in time.

DR. GEORGE HENRY FOX said his impression from the photograph shown was that the case was different from the cases of parapsoriasis which he had recognized, and some of which he had undoubtedly seen and not recognized. It seemed different from the cases which he had associated with that name. It reminded him of a case that was under his care for a number of years at the Skin and Cancer Hospital which was subsequently reported by Drs. Fordyce and Gottheil under the name of dermatitis vegetans. In the case of a young man recently under observation, the eruption had existed for six years and had resisted all sorts of local treatment. The patient was put on a strict diet, and in a short time a steady improvement was noted, which finally went on to a complete cure. This patient, during the course of his eruption, was in fairly good health and took part in the athletics at his school, but the restricted diet seemed to have the effect of causing the entire disappearance of the eruption, while local treatment did not influence it in the slightest degree.

DR. JAY F. SCHAMBERG referred to a case of resistant scaly erythroderma occurring in a private patient, a man about forty-five years old. In this case the original patch was on the face, near the angle of the mouth. This patch had lost its primary characteristics and had undergone atrophy, so that the skin was slightly wrinkled. Elsewhere on the body the eruption showed its usual characteristics. A photo-micrograph of this case, Dr. Schamberg said, was included in the photographic exhibit. The histological changes were absolutely typical of those described by Colecott Fox and Mae Leod in their very excellent paper on this subject.

DR. GEORGE PERNET said that this question of parapsoriasis was such a very difficult and intricate one that it was impossible to discuss it at a meeting of this kind. However, he ventured, in this connection, to

refer to the case of Dr. Anthony of Chicago, of which mention had been made in Dr. Ravogli's paper. Dr. Pernet said he saw Dr. Anthony's case in London, and it was certainly absolutely different from the photographs shown by Dr. Ravogli. Dr. Anthony's case was a very curious one, and one of the speaker's first ideas in connection with it was that it might eventually develop into a case of mycosis fungoides. A description of the case as seen in London, was included in the proceedings of the Dermatological Section of the Royal Society of Medicine.* In regard to that case, he ventured to differ from Dr. Anthony's diagnosis of parakeratosis variegata, and he called it erythro-atrophoderma perstans. In the middle of the trunk, anteriorly, there was a lesion about four inches in diameter, fairly circular. Under the X-rays, this disappeared almost entirely; whether it subsequently returned he could not say. The patient left London and escaped his further observation, nor was he able to get a biopsy. The case was absolutely different from that described by Dr. Ravogli, and he did not think it belonged to the same category.

DR. S. POLLITZER said it was very difficult to come to a conclusion from the description of a lesion or even from photographs, but from what he knew of this subject, the case described by Dr. Ravogli did not resemble any of the cases of parapsoriasis or parakeratosis that he was acquainted with. The great extent of the lesion on the face was much against such a diagnosis. The serpiginous character of the lesion, especially on the hands, was against that diagnosis, and above all, the tremendous scaling reported was decidedly against the diagnosis of parakeratosis.

As to the histological features in Dr. Ravogli's case, the pictures shown were very small and lacked details that might have been visible under the microscope, but in so far as they could be made out, the pictures did not show any parapsoriasis. They bore decidedly more resemblance to psoriasis. The great papillary hypertrophy and the prolongation of the interpapillary rete suggested psoriasis, with an unusual amount of cellular infiltration in the papillæ. Dr. Pollitzer said he would not venture to make a positive diagnosis of an atypical psoriasis, but the clinical as well as the histological resemblance to that disease was far greater than to any case of érythrodermie pityriasisque en plaques disseminées that he had ever seen.

DR. RAVOGLI said that in reference to this group of affections we had parapsoriasis or pityriasis lichenoides chronica, consisting of papules which were separated one from another and scattered over the body, but the case he reported he referred to the third group of parapsoriasis, which was érythrodermie pityriasisque en plaques disseminées.

He had studied this case for a long time, and there was no idea of
* *Brit. Jour. Dermat.*, 1908, p. 49.

psoriasis. The eruption was entirely different. The patches consisted of small papules close together. The imbricated scaliness so characteristic of psoriasis was lacking. The scales could not be easily removed, as would be the case in psoriasis, and there was no difference in the size of the lesions such as would be found in psoriasis. When the scales were rubbed off no punctiform haemorrhages appeared. Psoriasis lesions were easily removed by pyrogallic acid or chrysarobin, but in this case these remedies were without effect. The only remedy that proved beneficial was the injection of cacodylic acid, ten per cent. solution, but even then the improvement was only temporary. In parakeratosis one would often observe periods of improvement.

In regard to the histological features referred to by Dr. Pollitzer, Dr. Ravagli said he had seen this papillary hypertrophy with marked hypertrophy of the epithelium, congestion of the blood vessels and the increased cellular infiltration in the papillæ in other conditions besides psoriasis. He did not think the case could be called psoriasis, nor could it be referred to syphilis. Therefore, he still maintained that the case could properly be considered one of parapsoriasis.

PRIVATE NOTES ON SEVERAL OF THE RARE DERMATOSES.

By WILLIAM B. TRIMBLE, M. D., New York.

Lecturer on Diseases of the Skin, and Chief of the Dermatological Clinic, University and Bellevue Hospital Medical College; Assistant at the New York Skin and Cancer Hospital.

I N looking through my history book recently to find the record of a special patient, a number of interesting and almost forgotten cases were reviewed, and having good photographs and rather full notes, it occurred to me that a report of several might be of interest to the readers of THE JOURNAL. Moreover, I am of the opinion that cases of comparative rarity like these should be put on record even though the diagnosis is simple and unmistakable. Four cases have been selected for this report and like most of their kind, each has one or two points of individual interest.

CASE 1. FIBROMA MOLLUSCUM.

This patient, a woman, has been under observation for about two years. She is a native of Germany, but has spent most of her life in the United States. She is forty-seven years old, a widow and has one daughter of nineteen years. She has had five children,

four of whom are dead; one died at birth, one of marasmus, one of pneumonia and one of "summer complaint." She has never had a miscarriage. She had all the usual diseases of childhood, but since puberty has been in excellent health, with nothing to disturb her peace of mind except the dermatological condition. The family history does not seem to have any bearing on the case; to her knowledge none of her antecedents suffered from any chronic ailment or had anything like fibroma.

As can readily be seen from the accompanying photograph (Fig. 1), the patient is practically covered with small tumors, varying in size and color. Some of these are as small as the head of a match, while others are as large as a walnut. The color of the majority of these growths is the same as that of the healthy skin, but a few take on a bluish tint. The location is general, but the lesions are more numerous on the trunk and upper extremities; however, the lower extremities are by no means free. The growths are soft, and some of them when picked up between the thumb and forefinger, are found to be almost empty. This absorption has taken place to such a marked degree in some of the tumors, that it gives them the appearance and feel of small collapsed bladders. There are areas of pigmentation scattered over the woman's body; but whether these preceded the development of the tumors, she does not remember. Attention has been called to this point by Weber in a very interesting article in the February, 1909, issue of the *British Journal of Dermatology*.

Arsenic has been said to be beneficial in some cases. It was administered to this woman, both in the form of Fowler's solution and Asiatic pills. At one period it was thought some improvement was noticed, but later I decided that it was the working of my imagination. It seemed somewhat useless to make a biopsy, still it was done and the findings were the same as those described by other observers—an imperfectly developed connective tissue growth in the corium. Quite a difference of opinion exists as to the beginning of the process; whether in the connective tissue of the corium, the hair follicle, the sebaceous gland, or the connective tissue sheath of the nerves; von Recklinghausen says that most cases have the latter origin.

CASE 2. FIBROMA MOLLUSCUM.

The daughter of the previous case. The father's death was caused by tuberculosis in his thirty-third year. Her age is nineteen; birthplace, United States; occupation, seamstress; she is unmarried. The mother claims that she weighed only four pounds at birth. Dur-

ing her childhood she had scarlet fever, measles, chicken-pox, whooping cough, etc.; when a babe, she had also an occasional convulsion. At one time, the mother says, the girl, when quite young, had an outbreak of bullous lesions on the face; from her description this eruption was probably an impetigo. Her mentality seems normal, considering her station in life. Since her fourteenth year she has been in very good health. Her menstrual periods began at sixteen. At present she is delicate looking and somewhat anæmic. On the right forearm there are three or four bluish-looking tumors about the size of a small marble; these have not, as yet, reached the point when they look like growths on the skin, but seem deep-seated, pushing the epidermis upward. There are two lesions on the left forearm; the rest of the body is free. These growths were first noticed in her sixteenth year, and have been slowly increasing in size up to this writing.

CASE 3. ELEPHANTIASIS.

Referred by Dr. William Menger. This patient is an American woman, born in New York. She is thirty-five years old, strong and healthy looking; married, but has no children; she has had two miscarriages. The duration is nine years, and the right leg is the one affected; there is a slight œdema of the ankle on the left side, but otherwise it is normal. The disease began with a slight tumefaction of the calf, several months prior to her marriage, when she was twenty-six years old. The patient has always been in excellent health. The family history does not seem to bear much weight; so far as she knows, none of her ancestors were troubled with a similar malady. One of her parents is still living, the other having died as the result of an accident. She has never been a hundred miles from the city in her life. At the present time the disease extends from the ankle to the middle of the thigh; the point of greatest swelling is the calf, a little above its middle; at this place the circumference is 31 inches, as against 16 inches on the normal side. The thigh just above the knee measures $29\frac{1}{2}$ inches. As yet the whole surface is practically smooth; in one area, the lower part, it is beginning to get a little rough, as if it were making an attempt to become papillomatous. The patient objected to a biopsy, and it was not insisted upon, as the pathology can be found in all the well-known textbooks. The filaria was sought for, but not found. The blood examination was made by Dr. Arthur Mandel, and the report follows:

Time of coagulation, four minutes. Red cells, 4,200,000; haemoglobin, 83%; color index, 0.9+; white cells, 7,000. Differential count: Polymorphonuclear neutrophiles, 67%; lymphocytes, 27%; large mononuclears and transitional forms, 3%; eosinophiles, 2%; basophiles, 1%.

Examination of a smear:

Malaria, filaria and other parasites not found.

Red cells normal in size, shape and staining affinities.

L. L. Hill of Alabama in reporting a number of cases of lymph-scirotum and other forms of elephantiasis, has said, that in all probability, some cases were due to lues. This statement was endorsed by Ravogli of Cincinnati. Absolutely no history of this nature could be elicited from the patient, but upon the strength of these remarks she was put on "mixed treatment," and later given a course of injections of salicylate of mercury. No benefit accrued from this treatment, as was anticipated; and evidently this is a true case of elephantiasis. During this past summer, six months after the intramuscular injections, she developed several small abscesses in the affected leg; one of these became so troublesome, that it was necessary to incise it. The healing was extremely slow. After a period it is my intention to try injections of fibrolysin as suggested by Castellani at the Dermatological Congress of 1907.

CASE 4. MYCOSIS FUNGOIDES: PREFUNGOID STAGE.

Referred by Dr. R. G. Reese. The patient was a highly educated gentleman; American; single; born in New York City. He was of medium height, and weighed about 160 pounds. He died in his seventy-third year from a plain, well-defined case of pneumonia, being sick less than a week. During his life he enjoyed splendid health, with the exception of the dermatological complaint. The family history furnishes no information; both his parents lived to a good old age, and no one in the family ever suffered from a chronic skin affection. The duration was twenty-five years, and the disease always remained in the premycotic stage. Never did he have a nodule or tumor. The location was general, but the characteristic plaques were marked in the areas shown in the illustration. Scattered over almost the whole integument, the face and neck excepted, were dusky-red, slightly scaly patches, varying in size

from a small orange to large gyrate sheets of eruption. Some of the lesions were sharply circumscribed, while others, especially the large ones, shaded off into healthy skin with no definite border. The infiltration was quite marked in some of the plaques; where this existed the lines of the skin were prominently accentuated. This thickening of the patches probably caused the skin lines or furrows to appear deeper or more marked than they otherwise would be. At one time in answer to a summons to his residence, an infection of the forearm was found. I thought at this visit that possibly a tumor would develop; my fears were groundless; it was merely a simple infection due to scratching, and healed readily with mild antiseptic lotions. The disease itched intensely, and the patient, after nearly all the antipruritics in the Pharmacopœia had been administered, asserted that he had received more relief from the ordinary boracic acid ointment of the U. S. P. than from anything else. I had not known before that boracic acid ointment possessed any particular antipruritic properties: it loses its charm with other cases.

The lesions of this disease resemble somewhat those of dry eczema, and without a history one may be temporarily confused; however, to a dermatologist there is an indescribable something connected with patches of this kind, which causes suspicion to arise, that he is dealing with something other than an ordinary eczema; perhaps the accentuation of the lines or furrows may account for this. This feature has always seemed to me to be prominent in premycosis.

The main points of interest are:

- (1) The multiplicity of lesions in the first case of fibroma molluscum, and the fact that the disease has begun in the daughter.
- (2) The development of a true case of elephantiasis in a patient who has always lived in New York and vicinity.
- (3) The long duration of the premycotic stage of mycosis fungoides.

These features of fibroma and elephantiasis have been observed before, but they do not happen often. This is probably the longest time on record, (at least within my knowledge) for the early stage of mycosis fungoides.

PLATE XXIX.—To Illustrate Article by DR. WILLIAM B. TRIMBLE.

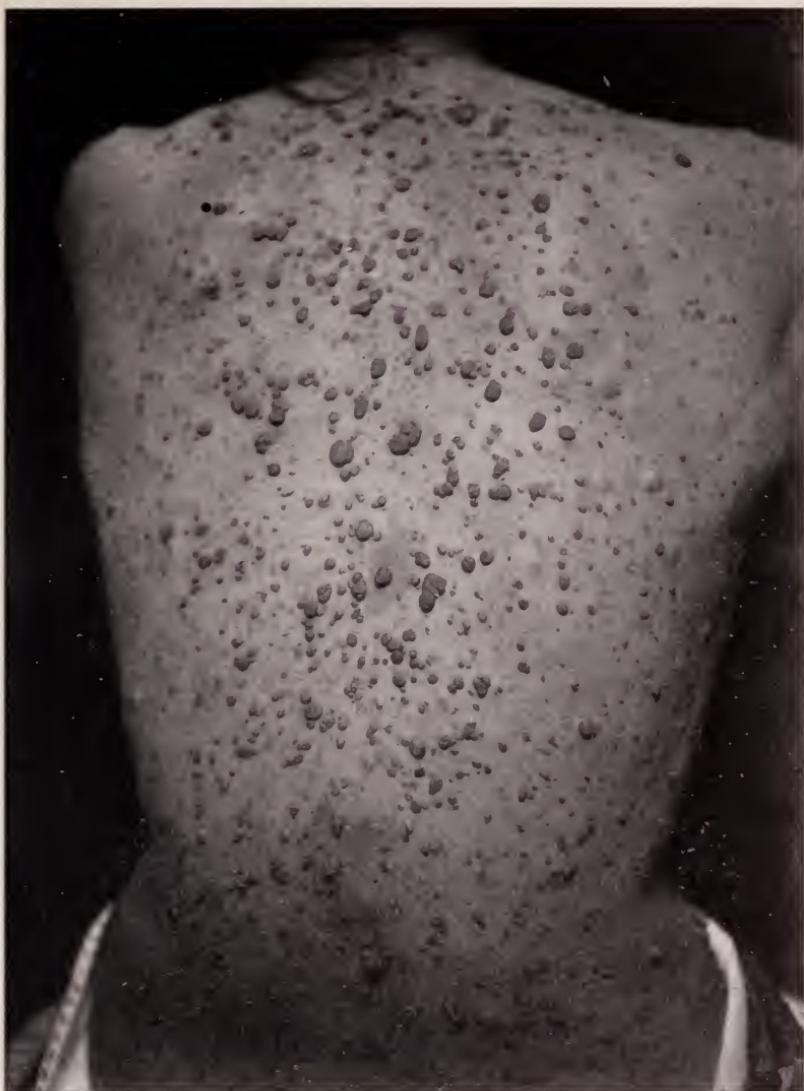


FIG. 1.



FIG. 2.

PLATE XXX.—To Illustrate Article by DR. WILLIAM B. TRIMBLE.



FIG. 3.



FIG. 4.

A CASE OF KERATOSIS PALMARIS ET PLANTARIS WITH ALOPECIA.

By JAMES DUNN, M. D.

A. A. Surgeon, Public Health and Marine Hospital Service.

THIS quite rare disease was seen at the Immigrant Hospital at Ellis Island in a Croatian immigrant twenty-six years of age, who, previous to emigrating to America, had worked as a farm laborer in a locality about fifty miles east of Fiume.

There was marked hypertrophy of the epidermis over the palms and soles which extended slightly onto the flexor surfaces of the forearms, the sides of the fingers, and also involved some of the knuckles. The epidermis over the instep was comparatively free.

At the edges of the thickened areas there was a narrow pinkish zone which seemed to be caused by the pressure of the thickened epidermis upon the underlying blood vessels, producing a passive hyperæmia. There was marked hyperidrosis of the palms and soles.

A slight contracture of the little and ring fingers of the right hand was also present, but it was impossible to find out how long it had existed. The nails of both hands and feet were thickened and the free edges were broken, causing them to have much the appearance of the favus or ringworm nail. The teeth were normal.

There was complete absence of eyebrows, eyelashes, axillary, and pubic hairs ; a few lanugo hairs were on the face and scarcely any hair over the temples. The epidermis over the other portions of the body was normal.

The family history was negative. The patient said that he had had this condition as long as he could remember, and his mother told him that he was born with it.

When he was a small child there was almost complete alopecia of the scalp, except on top, but at the age of puberty the hair became thicker over the back of the head, but never grew over the temples.

He has never been much concerned over the thickening of the epidermis of the palms and soles, as he says he can do any kind of work and never blister his hands. There seemed to be an increased activity of the sudoriparous glands, as it was noticed that after the patient had retired, even though sleeping in a cool room, he was

covered with perspiration. This hyperidrosis was the only symptom complained of by the patient.

Physical examination of the heart and lungs was negative and the patient stated that he had never been seriously ill.

Hyde mentions that in these patients "the pulse is sometimes exceedingly slow, running in adults from fifty to fifty-five beats a minute." Special attention was paid to the pulse in this case, and it was found that it was usually about eighty beats per minute and never fell below the normal.

It is interesting to note that the first doctor who saw this case, upon superficial examination, marked him as "suspicious of leprosy" and that Stelwagon in his book, "Diseases of the Skin," states that "Hovorka, on the Island of Meleda, off the coast of Dalmatia, viewed this disease originally as a form of leprosy, but subsequently retracted his opinion." Another point of interest is that this case came from a locality about three hundred miles north of Meleda.

Hyde states in his description of the hair that it is "derived from the epidermis"; it seems peculiar that in this case we have a well-marked keratosis on one part of the body with congenital alopecia on another.

I wish to express thanks to my colleagues (the officers of the Public Health and Marine Hospital Service, at Ellis Island), who assisted in the detection of this case.

IMMIGRANT HOSPITAL, ELLIS ISLAND, N. Y. H.

PLATE XXXI.—To Illustrate Article by DR. JAMES DUNN.



FIG. 1.

Showing absence of eyebrows, eyelashes and beard, and partial alopecia of the scalp.



FIG. 2.

Showing keratosis of the sole.

PLATE XXXII.—To Illustrate Article by DR. JAMES DUNN.



FIG. 3.

Showing palmar keratosis. Note the contracture of the little and ring fingers.



FIG. 4.—Showing the thickened and broken appearance of the nails.

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, November 23, 1909.

DR. SAMUEL SHERWELL, President.

Pityriasis Rubra Pilaris. Presented by DR. ROBINSON.

The patient was a man fifty years of age, born in Germany, married, and the father of seven living children. There was no history of cutaneous disease in his family. Occupation, tinsmith and roofer.

There had been no cutaneous disease until five months ago, when the eruption appeared on both palms as a dry, slightly scaling condition accompanied soon by slight fissures in the flexures of the joints. The eruption soon extended over the hands and on the arms and soon afterward on the feet. All the nails were affected, the ridges running transversely and none longitudinally. Beneath the end of each nail was a very thick corneous mass. All the fingers were affected, enlarged, reddish in color, with thickened epidermis and subepidermal infiltration and without a weeping or moist surface. The natural folds were much exaggerated. The corneous layer was thickened and covered with lamellar scales, showing a reddish, shining surface beneath. The hair follicle orifices over the first phalanx were enlarged, containing an increased amount of epithelial cells.

The palms showed a thickened, infiltrated skin with a shining, reddish surface and slight scaling with exaggerated natural furrows, but no fissures. The arms, legs and lower half of the posterior surface of the trunk presented the usual character of a diffuse pityriasis rubra pilaris, or some cases of secondary exfoliative dermatitis. The anterior surface of the thorax showed the eruption to be confined almost entirely to the hair follicles and were the characteristic lesions of the disease. The greater part of the anterior surface of the abdomen was pale in color and the eruption limited to the follicles. On the lateral sides there was a diffuse, dry, scaly eruption, in which dark and light areas were intermingled. Itching was very intense.

Urine, normal; blood examination, red count, 4,560,000; white count, 9000; haemoglobin, 90%; differential count, polynuclears, 76%; lymphocytes, 14%; eosinophiles, 7%; transitionals, 1%; mast cells, 2%.

DR. JACKSON agreed with the diagnosis.

DR. HOWARD FOX said that when the case was first seen at the Skin and Cancer Hospital, they were not sure of the diagnosis. Pityriasis rubra pilaris seemed the most probable, but they were not then willing to make a positive diagnosis. When first seen the papular eruption on the abdomen was much more marked, so that he was able to make some very satisfactory photographs. Treatment did not help the patient at all. Arsenic had not been given.

DR. WHITEHOUSE agreed with the diagnosis of pityriasis rubra pilaris. The most interesting point about the case was the peculiar pigmentation. He could not understand it if the man had not been taking arsenic.

DR. FOX said that as he remembered the case at the Skin and Cancer Hospital, several made a positive diagnosis of pityriasis rubra pilaris. No abnormal pigmentation was then noticed. This remarkable feature, which had nothing to do with the pityriasis, looked more like vitiligo than anything else, especially the patches about the genitals.

DR. ELLIOT agreed with the diagnosis of pityriasis rubra pilaris, but thought that the case should be more carefully investigated. There was pigmentation of both sides of the hard palate, and there was also a general pigmentation of the lip and the mucous membrane. Possibly by following the case up for a while there might be found to be an Addison's disease in conjunction with it. He could not consider it a case of vitiligo.

DR. TRIMBLE said that when they first saw the case at the Skin and Cancer Hospital they felt quite certain that it was pityriasis rubra pilaris, but the patient did not then have the pigmentation that was present when he was presented at the Society. Upon first glance the pigmentation looked something like the stain from chrysarobin ointment.

DR. SHERWELL agreed with the diagnosis of pityriasis rubra pilaris.

Dermatitis Medicamentosa (Quinine). Presented by DR. TRIMBLE.

The patient, a man forty-nine years of age, had called on Dr. Trimble about three weeks previously, with what seemed to be herpes progenitalis. He also exhibited two bullous lesions on the trunk, about the size of a twenty-five-cent piece, surrounded by an inflammatory areola; and several collapsed bullæ around the anal margin. The lesions at that time had existed for three days, and were without subjective symptoms, with the exception of those on the foreskin. These latter caused itching and burning. As the cutaneous condition on the body did not conform to any well-known dermatosis, the man was questioned as to whether he had taken any drug, and it developed that he had taken nothing but a dose of quinine for a "cold." He was given some simple treatment, and the condition rapidly disappeared. On account of the rarity of bullous lesions following the administration of quinine, a test was decided upon. Two days ago, the patient was given five grains of quinine, and the next day the cutaneous manifestation reappeared. They were vesicular on the prepuce, but erythematous on the body. The case was shown on account of a bullous dermatitis following quinine; and two other interesting features were, that the lesions were of the same size and in exactly the same locations as in the previous outbreak. Another point was that the patient could take quinine with impunity previous to two years ago, this idiosyncrasy having developed since that time.

DR. ELLIOT said that he had seen a number of cases of bullous dermatitis from the administration of quinine, but had never seen one that recurred in exactly the same place. That is a feature which has been generally recognized as belonging to the coal-tar products, especially antipyrin. In the case of a patient with whom he experimented for a number of years, every time the

man took antipyrin he would have an enormous œdema of the scrotum. In a week or more it would disappear. When he took antipyrin again the same condition would recur. He had seen a number of cases of bullous, or vesicular, or erythematous eruptions, which always occurred after some medicine for headache had been taken, and which always recurred on the same region. The headache powders in these cases always contained antipyrin, or antifibrin, five to ten grains in the dose. These particular cases had since had headaches and had been treated with other remedies, and had had no recurrences. He had not seen any case in which the lesions recurred always in the same spot from quinine. In the present case it was possible that there was a somnolent area which had been quickened into activity by a readministration of the drug, and for that reason the eruption recurred on the same area. That is, the space of time between the first administration of quinine and its readministration was too short.

DR. G. H. FOX said that he had nothing to say about the eruption, but he felt very grateful to DR. TRIMBLE for presenting such an interesting case, and wished that more of these cases of drug dermatoses could be presented before the Society. Perhaps DR. TRIMBLE might be able to give the man quinine again and make some interesting observations, and show him again a month or so later.

DR. SHERWELL said that the case was extremely interesting, especially when considered in connection with the remarks of DR. ELLIOT on dermatitis caused by quinine. He himself had seen many cases of drug eruption, but curiously enough never one that he could ascribe to quinine. He had given this drug very much, and frequently in large doses, hypodermatically, and did not remember any eruption of any sort, except some swelling or erythema or an abscess at or around the seat of injury. In view, too, of the immense number of headache powders that were being taken by the laity, it seemed strange that we did not see more of antipyrin or acetanilid dermatitis.

DR. TRIMBLE said that the man seemed to be very truthful, and said that he had taken some capsules given him by his family physician, which might have contained some other drug than the quinine. He took two or three of these capsules, but had taken no drug since that time. For the test he had only given the man five grains of quinine without any antipyrin, and the eruption appeared, as could be seen. He was under the impression that the bullous form of quinine eruption was rare, though the erythematous form was common. He thought he might be able to get the man to take a dose of antipyrin perhaps, but it was doubtful if he could be induced to take quinine again.

DR. ELLIOT said that he would like to convey the idea that it has been observed, and reported by a great many, that the recurrence on the same region belongs especially to antipyrin. He knew of no literature which attributed such occurrence to quinine. He had not referred to the quinine erythema, but to the bullous eruptions caused by the drug.

Drug Eruption (Bromide). Presented by DR. WHITEHOUSE.

DR. WHITEHOUSE said that the case was not of much importance excepting in its relation to the one just shown. He considered that it was a bromoderma, simulating epithelioma. It was only of six days' duration. The woman was an asthmatic, and had been taking a druggist's prescription. There were two spots beneath one eye, one on the nose, and one or two lesions on the hands. She was seen two days ago for the first time, and the lesions had improved, as she stopped taking the original medicine right away, and had substituted rhubarb

and soda. When first seen the lesions on the cheek were hard, and raised at least one quarter of an inch, the size of a ten-cent piece with a scabbed summit, very much like the pearly nodule of epithelioma.

Seborrhœa of the Face. Presented by DR. JACKSON.

The patient was a young woman, twenty-five years old, unmarried. When first seen in April, 1909, she stated that while she never had had a good complexion, her present condition dated back about ten months. She thought that it followed a severe sunburn which she experienced at about that time.

At the time of her first visit, her whole face, excepting the chin, was covered with a thick coat of fat, which could be scraped up in masses with the finger nail. Under this coating the skin was pinkish. Her scalp was similarly affected.

On account of the disfigurement the patient did not go out in the air. Otherwise she felt well.

Since April he had had the patient under constant observation, excepting for six weeks in the summer, when Dr. Swift had charge of her. Though improvement took place from time to time, as soon as treatment was stopped, the condition became as bad as before. He had used sulphur, mercury, resorcin, cold cream, calamine wash, and boric acid externally in all sorts of combinations, with soap friction at times. He had tried to improve her general condition by diet, exercise, iron, ichthylol and arsenic, but all to no permanent effect.

He had brought her to the meeting for advice as to the treatment he should adopt.

DR. WINFIELD suggested treatment with acetate of aluminium, and a few X-ray exposures.

DR. JACKSON replied that the patient would not submit to X-radiation.

DR. SHERWELL inquired whether Dr. Jackson had used any of the tar products.

DR. JACKSON replied that the patient's skin was very sensitive and became very easily inflamed. She was very neurasthenic, and easily alarmed by the inflammatory symptoms. He would gladly try tar, however. At first she declared she could not go out of doors on account of her face. It was so greasy that the dust stuck to it, and it attracted attention. Now by a little persuasion she was out of doors a good deal more.

DR. G. H. FOX thought that treatment should be directed to the patient's nervous system, with applications of talcum powder to the face. Local treatment was more apt to increase the trouble than to do any good.

DR. JACKSON replied that she was improving under nerve tonics and general hygienic treatment.

DR. SHERWELL said that in his practice he had often found that these conditions were associated with the menstrual trouble.

DR. JACKSON replied that he had seen the patient right along for six months, and that the menstrual period did not seem to make any difference.

DR. HOWARD FOX inquired whether any of the other members had ever seen so extensive and aggravated a case of seborrhœa.

DR. SHERWELL said that he had seen several such cases in Hebra's clinic. He remembered particularly two such, in vine workers, but who seemed to be addicted to the ultimate product of their work.

Case for Diagnosis. Presented by DR. TRIMBLE.

The patient was a woman, married, twenty-six years of age. The case was interesting, as it exhibited two or three different cutaneous conditions. She was shown mainly on account of the peculiar scarring on the upper part of the back. The scars were numerous, very superficial, quite round, and their size varied from a bean to a dime. They were dotted throughout with what seemed to be the remains of follicular outlets. These lesions were suspiciously suggestive of an old luetic condition, but the history was negative in that respect, and the Wassermann reaction was also negative. The body exhibited a number of papules, chiefly on the arms and legs, which itched intensely. Small punctate scars could be seen, and also pigmentation. The condition on the body was diagnosed as dermatitis herpetiformis, as the patient had had recurrent attacks for the past fifteen or sixteen years. However, no vesicles had been seen since the patient had been under observation. The lesions on the face were different from the others. The patient claimed that these lesions had existed for about two months, but she had also been affected in like manner before. The face lesions were infiltrated, and were very slightly scaly, with no definite border. They resembled seborrhœa, and also lupus erythematosus.

DR. G. H. FOX said that it looked like a case of dermatitis herpetiformis.

DR. JACKSON thought that the eruption on the body was dermatitis herpetiformis. The condition on the back seemed to be traumatic plus an infection of some kind. It was very remarkable that she should have so many scars on her back and arms. What the condition on her face was, he could not tell. He would not like to venture a diagnosis until after seeing it in the daylight.

DR. SCHWARTZ agreed with the diagnosis of dermatitis herpetiformis.

DR. ELLIOT said that he regarded the case as one of dermatitis herpetiformis, with scars from scratching. The lesions on the face suggested that form of lupus erythematosus previously called seborrhœa congestiva.

DR. TRIMBLE said that in his opinion the lesions on the body were dermatitis herpetiformis, but he was not sure whether the other condition was due to the trauma from the nails or not, and he presented the case for that reason. The lesions on the face were also doubtful; they looked quite a little like erythematous lupus of the congested type, but he did not feel certain of this.

Lupus Erythematosus with Morphœa-Like Scar Formation. Presented by DR. FORDYCE.

The patient was a woman, fifty years of age, married, a native of Roumania; the duration was eight years; location, bat's-wing lesion involving the nose and cheeks. There was considerable cicatrical tissue, somewhat like that in morphœa. The lesions were more extensive on the left side, and telangiectases were marked on both sides. There

was a small crusted lesion on the tip of the nose; the advancing border was smooth, violaceous, infiltrated, and not scaly. The patient gave a history of having been treated with the Roentgen rays, and the dense scarring was thought to be the result of that.

DR. WHITEHOUSE said that he had seen a number of cases of lupus erythematosus treated by the X-ray, but he would utterly condemn its use for that disease. The results of such treatment that he had seen had certainly been much worse than the effects produced by the disease itself or by some less drastic form of treatment.

DRS. FOX, ELLIOT and JACKSON agreed most emphatically with what Dr. Whitehouse had said. Dr. Jackson said that he used his X-ray apparatus very much less than he did six months ago, employing it only in cases which were intractable or very obstinate to other forms of treatment.

DR. WINFIELD said that he had never seen a case of erythematous lupus benefited by the X-ray. He had used it, but the last state of the patient was worse than the first.

DR. HOWARD FOX agreed with Dr. Winfield.

DR. TRIMBLE coincided with the opinion of the majority of the members. He had never seen a case benefited by the X-ray though he had seen them helped by the high-frequency spark. He thought that owing to the disastrous results, that sometimes followed the use of the X-ray, it was better not to use it about the face, until most of the older methods had been tried without avail.

DR. SHERWELL said that the condition of the scars was very different from other lesions produced by the X-ray. There was none of the fine capillary telangiectasia to be seen. It might have been the result of an X-ray burn or any other kind of a burn, but it lacked the peculiar feature of a radiodermatitis.

DR. ELLIOT called attention to the extraordinary change of opinion in regard to the use of the X-ray which had come over the members of this Society as compared with five years ago, when there was nothing that was not cured by the X-ray—the days when Allen was with us, and the X-ray was regarded as a panacea for every skin disease that ever existed. A few of the members, and he was glad to count himself among them, however, had fought against it from the beginning.

DR. G. H. Fox said that at the outset, a few years ago, when every one was using the X-ray for every imaginable condition, he objected to its general use, and was one of the last to take it up. Now, however, the pendulum seemed to be swinging too far in the other direction, for in spite of the ill-effects produced by the improper use of the X-ray, there were, the speaker said, some dermatoses in which it was able to do the greatest amount of good, and it should not be given up entirely, but should be employed in those cases where effects might be produced that could not be obtained by any other method of treatment. It was like Koch's old tuberculin, over which the profession went crazy for a while, and then all condemned it. The X-ray was certainly a valuable assistant in dermatological therapeutics, in spite of the harm done by its too frequent and careless use.

DR. ELLIOT said that it should be used only for those cases for which there was no other therapeutic aid. It did good in mycosis fungoides, in relieving the pruritus, but it did not cure or shorten the disease. It was absurd to use it in cases of acne or in eczema. It had been used to relieve hypertrichosis and also alopecia, and besides such opposite conditions, for every kind of cutaneous disease, without rhyme or reason, but apparently only to relieve one of the burden of considering therapeutics. In conditions for which no one could suggest a remedy, it might be justifiable. But to use it indiscriminately for every

banal eruption such as acne vulgaris, impetigo contagiosa, sycosis, scabies, etc., he considered inexcusable. He knew of one case of burn where the patient was treated without the physician even looking at the eruption. Such action he considered criminal.

DR. WINFIELD recalled a case which he had shown before the Society three or four years ago—a young Scotch woman who had been treated by the X-ray and Finsen light for erythematous lupus. She had developed a hard scar, a result of the treatment, similar to the one shown this evening.

DR. G. H. FOX said that the three diseases in which he had found the X-ray to do the most good were the parasitic affections of the scalp, mycosis fungoides, and keloid. There were some other cases in which it had been found of value, but in these three we were certainly justified in using the X-ray.

DR. TRIMBLE said that he would like to add one more disease to those in which Dr. Fox would use the X-ray. It seemed to be of some benefit in lupus vulgaris, especially that which occurred at the muco-cutaneous junction of the nose. He had had some good results and no bad ones in such instances. It was used very carefully, and it seemed to be the only thing that was beneficial. It did not, however, stop the recurrence.

DR. ELLIOT said that Dr. Pancoast, of Philadelphia, and the Harvard Committee on Cancer had also reported the same thing. The cases might skin over, but they recurred, and then the disease proceeded more rapidly than before, and were most resistant to treatment. In view of what he had previously said he would mention a case representing the lichen variegatus of Crocker. Stelwagon, Bowen and others had seen the case, and they practically agreed on the diagnosis. These cases had always resisted all treatment. Gilchrist used the X-ray upon it, however, and it disappeared, leaving no trace of the disease. The child was then about fourteen or fifteen years of age. She was, however, pitted from head to foot, as though she had had malignant smallpox. We cannot say that was the result of the X-ray, as the same scarring occurred where lesions had undergone spontaneous involution. In such a case its use was undoubtedly warranted. Cases of epithelioma should be dealt with surgically if possible, but in case of an inoperable epithelioma, the X-ray might be tried. The patients ought, however, to have the right to be treated in every way before having recourse to the X-ray. Dr. Elliot had recently seen several cases which had been treated by the X-ray for acne, and they had come to see if they could get rid of the atrophied condition of the face resulting from the X-radiation. It was on the basis of such experience that he had made his remarks.

DR. HOWARD FOX, referring to lichen variegatus not being cured excepting by the X-ray, recalled a case treated by his father, which corresponded so closely to Crocker's description, that it seemed taken out of his text-book. The eruption finally disappeared before the case could be shown. The condition had lasted for a number of years, but was cured by a general tonic treatment. The case had not yet been reported. The last time the patient was seen, the lesions had practically disappeared.

DR. TRIMBLE said that he had reported three cases of lichen variegatus; but had not tried the X-ray on them. They were very rebellious to treatment, and the improvement from any form of treatment was very slight. One improved under the treatment usually applied to psoriasis. One case was still under observation, and he thought he would follow Dr. Elliot's suggestion and give the patient a few X-ray exposures.

DR. ELLIOT said that the girl to whom he had referred, underwent a very varied treatment before she had the X-ray.

DR. SHERWELL said that he wanted to emphasize the fact that epithelioma apparently cured, and reappearing after the use of the Roentgen ray did not

respond to the action of the X-ray a second time so well, and often not at all. In fact the epitheliomatous trouble seemed to become even more malignantly active.

REPORTS ON CASES PREVIOUSLY SHOWN.

DR. G. H. FOX said that some of the members might remember a young man whom he had shown years ago with a case of xeroderma pigmentosum, who was being treated at the Skin and Cancer Hospital. He had epitheliomata on the cheek and nose. These were operated upon at the hospital, and disappeared for a time, but the one on the cheek had now returned, and he refused to have anything done for it. But the use of the X-ray, while doing the epitheliomata no good, had certainly improved the xeroderma. The pigment seemed to have disappeared, and his skin had changed from a rough and dirty appearance to a comparatively smooth and fair condition.

At the first meeting this season he had shown a case of melanotic sarcoma of the ankle. This had been treated by the X-ray, and the large melanotic mass had flattened down and almost disappeared. A severe dermatitis of the leg with a raw surface, which existed a month ago had healed, and the ankle now was in a fair condition. He wished to speak particularly of a few small melanotic tumors around the ankle and upon the leg. For the last two weeks the house physician had been treating these with acid nitrate of mercury, which had eaten out the melanotic growth. They left deep ulcerations, which had healed, and to all appearances these melanotic growths had disappeared under this treatment. He hoped later to be able to show the patient again.

DR. WINFIELD, in reply to an inquiry from Dr. Elliot, reported that a case of sarcoma which he had shown at a previous meeting had proved to be a small round-celled sarcoma.

DR. JACKSON inquired whether any of the members had seen eczema leaving scars on the skin of a negro. He recently had a case in his service at the Vanderbilt Clinic which apparently was eczema of a child's face, but it left evident scars. He had written to Dr. Dyer, of New Orleans, in regard to this, and the latter replied that he had seen cases where eczema had apparently left scars on a negro's skin.

DR. ELLIOT said that if the case were pustular, there might be scars on account of the destruction of the tissue.

DR. JACKSON replied that it was a pustular eczema.

DR. G. H. FOX said that he had known eczema of the face in a white child to leave scars looking very much like variola cicatrices.

DR. SHERWELL said that aggravated cases of post-aural eczema often left scars, though it was true that they were superficial.

DR. ELLIOT in reply to an inquiry from Dr. Winfield as to what treatment he would suggest for multiple sarcomata, said that he knew of but two things to do: the first was to let them alone; and the other was to give hypodermic injections of arsenic. The result in either case was usually the same. Hardaway had reported a case of multiple sarcomata with spontaneous cure at the end of twenty years; that did not seem to be of the very malignant type. Dr. Sherwell, and others, however, had reported a case which got well under arsenic.

DR. SHERWELL said that Köbner and Funk had reported many cases of recovery.

DR. ELLIOT said that many patients had lived out their natural lives without any treatment whatsoever.

DR. JACKSON reported that the child with dermatitis herpetiformis, which he had shown at the previous meeting, was very much better. He treated it with bromide of potash internally and tar locally, which controlled the itching, and the child was getting well. Most of the skin was now in fine condition.

DR. HOWARD FOX exhibited some specimens of hookworm, which he had brought from Charlestown during a recent trip in the South. The hookworm problem had a dermatological interest from the fact that the larvæ entered the system by way of the skin, causing the so-called "ground itch."

DR. ELLIOT inquired whether the hookworm differed from the larva migrans. He had seen several cases from the South in which the history stated that it occurred after going barefooted in the sand a good deal. The lesion in the skin showed a regular serpentine path going up under the skin as shown in Crocker's Atlas. Was that the beginning of the hookworm disease, or was it a different parasite?

DR. FOX said that the creeping disease was supposed to be due to the larva migrans. It was an unusual condition, whereas ground itch was very common.

Replying to an inquiry from Dr. Elliot as to the appearance of the hookworm dermatitis, he said that he had not had an opportunity to see any cases. He had only visited several cities in the South, whereas the cases of ground itch were only to be seen in the country districts.

DR. ELLIOT said that the lesions seen by him indicated a progressive advance. Whether that represented the hookworm infection or was something else, was what he asked. Could the primary lesion in the skin of the hookworm disease be the one he referred to? All the cases came from the South, and all showed the same conditions.

DR. FOX said that he thought it was an entirely separate condition.

DR. TRIMBLE said he had seen a case of creeping disease during the past summer which had been practically cured by cauterization. The surgeon (L. L. Hill) had made an incision along the creeping border of the eruption and cauterized it, and the small scar from this incision was still visible in places. This same surgeon knew of two or three other cases in the vicinity. Hutchins, of Atlanta, had reported several cases of larva migrans.

DR. ELLIOT said that all the cases he had seen were in young boys of fourteen to fifteen years of age who had been running around in the sand with no shoes or stockings.

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY.

Stated Meeting held November 9, 1909.

SIGMUND POLLITZER, M. D., in the Chair.

Argyria. Presented by DR. DITTRICH for DR. GOTTHEIL.

The patient, an inmate of the City Hospital, contracted syphilis many years ago. There were many marks on his body, characteristic of

the trouble, and there was also some destruction of tissue in his nose. He had had frequent ulcerations in his mouth and had used nitrate of silver solution, sixty grains to the ounce, for a period of seven years. His face and neck and mucous membranes were bluish, and it was interesting to note that a scar on his neck was devoid of silver deposits.

DR. D. O. ROBINSON mentioned a case that she presented before the Sixth International Dermatological Congress in which argyria was observed in a patient, a female fifty-four years of age, who had been treated by means of a spray (silver nitrate, five grains to the ounce) for a catarrhal condition of her throat. Microscopical examination of a section from the shoulder showed the presence of pigment granules in the dense connective tissue of the sweat-gland coil and in the excretory duct. The pigment was abundant in the perimysium of the unstriped muscle bundles.

DR. POLLITZER called attention to the extreme degree of the discoloration, and its sharp limitation to the face, the hands being scarcely involved, and also to the absence of discoloration in scar tissue in the affected area.

DR. DITTRICH said that he had seen Dr. Robinson's case when connected with Dr. Robinson's clinic at the Polyclinic, and that he had seen great improvement in it while under treatment with potassium iodide, by mouth and by inunction.

Tuberculous Osteitis and Lupus Vulgaris. Presented by DR. DITTRICH for DR. GOTTHEIL.

E. W., the fifth child of seven living children, was always well till her second year, when she had the measles. Two months later she had pneumonia which was followed by nephritis.

At the age of three her parents noticed a spot on the left thigh, which looked like a ringworm, but was recalcitrant to treatment for over a year. The mother noticed that the large toe became swollen around the nail and was very painful. The mother thought it an ingrown toe-nail and took her to the German Hospital where the first joint was amputated after a short time. The wound healed, but eight months after, the disease returned in the scar, spreading quickly to the neighboring toes, while the lesion on the thigh at the same time increased rapidly. The great, second and third toes were one mass of foul-smelling ulcerations, while on the left thigh there was quite an area of cicatricial tissue with the characteristic lupus nodules, spreading peripherally. Also, on the right thigh behind the knee, was a patch of active lupus lesions.

DR. MAC KEE thought that an effort should be made to overcome the local condition without the loss of the limb. He would advise the use of the X-ray in an attempt to heal the cutaneous ulceration of the foot. The bones, which also appeared to be affected, he would treat by Bier's hyperæmic method. Within the last two years he had had the opportunity of observing the improvement in tuberculous lesions of the bones which were being treated by the Bier method, by taking radiographs before, and at various times during the treatment. He had not observed a complete disappearance of the lesion in a single case, but in many instances the improvement although slow, was exceedingly satisfactory. He believed that these and other conservative measures

offered the possibility of a cure in this case; and they would do no harm nor would they jeopardize the health of the patient and, inasmuch as amputation would only remove the local process, the other methods should be given a trial, leaving surgical intervention as a last resort.

Alopecia from Acquired Syphilis in a Young Child. Presented by DR. DITTRICH.

The patient was a little boy, three years old, born in the United States. A very clear history of syphilis was obtained from both his mother and father, the disease having been contracted some time after the birth of this child.

The patient was a well-developed, although somewhat anaemic child. He was quite healthy and did not show any manifestations of hereditary taint when born, neither did his sister, whom Dr. Dittrich examined carefully. Last July he developed a papule on the lower left leg, which soon became inflamed and ulcerated. The leg was quite swollen at the time. About a month after this, the boy was covered with brownish-red macules chiefly on the stomach and back. His hair, which was thick and shiny, became thin and lost its gloss.

When presented at the Society he had a large pigmented atrophic spot on the lower leg which was thought to be the site of the initial lesion. He also had brown, somewhat scaly spots on various parts of his body, a papule on his back in the left lumbar region, one on the anus and one in the arch of the right foot. He had some ulceration in the throat and the eyebrows and eyelashes were falling out. The cervical and epicondyloid glands were hard and enlarged.

DR. POLLITZER said there was no doubt that the initial lesion had been on the thigh where there remained a pigmented spot.

Papulo-Necrotic Tuberculide, with Erythema Induratum of Bazin (?)

Presented by DR. MAC KEE.

The patient, from Dr. Fordyce's clinic, was a woman of foreign birth, married and thirty-five years of age. No history of syphilis, cutaneous eruptions or abortions could be obtained. She was presented at the October meeting of the New York Dermatological Society by Dr. Fordyce, at which time Dr. Whitehouse said that he had given the patient anti-syphilitic treatment three years ago for a tumor of the jaw, with the result that the mass disappeared.

The present eruption began about one year ago as papules, which first appeared on the backs of the hands, and slowly spread up the extensor surfaces of the forearms to the elbows. The papules were very hard, considerably elevated, superficial, and non-pruritic. Some of the lesions presented depressed necrotic centres and there were a few small scars. The woman had been under observation for three months, in which time there had been no change in the character of the eruption, and no new lesions had been noted.

On the outer aspect of each leg, below the knee, was a deep, indurated nodule, about the size of a silver dollar, painful only on pressure and of a deep red color. Varicose veins were also present. There were also several small pigmented scars on the shins. The nodules, according to the patient's statement, had been present only three or four months. At the suggestion of Dr. Whitehouse, the patient was taking mercury, and potassium iodide. It was thought that slight improvement had occurred in all the lesions.

The case was presented as a possible papulo-necrotic tuberculide with erythema induration of Bazin.

Dr. TRIMBLE agreed with the diagnosis. While the lesions were mostly superficial, still a number of them were distinctly necrotic. The history of a tumor disappearing under "mixed treatment" was opposed to this, but the woman might have more than one disease. Though the lesions on the legs might be gummata, he thought that either erythema induratum or cellul-o-phlebitis was a more probable diagnosis; the leg lesions were not unlike those of erythema induratum, and if that were true it would be very interesting in association with the condition on the hands.

Dr. POLLITZER said that he had never seen so superficial a tuberculide, and that he could not see sufficient evidence to make a diagnosis of that disease in this case.

Dr. MAC KEE said he thought there could be no question but that the patient was a syphilitic, but he did not consider the present eruption of syphilitic origin. The papules on the hands and arms were very hard, and, although rather superficial, some of them presented necrotic centres, and there were a few small scars. The lesions, also, had been present for about a year with very little if any change in their character. During the three months in which he had had the patient under observation he had not been able to observe the development of new lesions nor had he noted any tendency toward involution. This latter statement could be modified, however, by the fact that there had been a slight improvement within the last two weeks under anti-syphilitic treatment. This fact, however, would not necessarily negative the diagnosis of tuberculide. The necrosis was slight and could, of course, be caused by external irritation, such as scratching, but there had been no pruritus nor was there any evidence of scratching. If the case were one that could be designated under papulo-necrotic tuberculide it would be one of unusual type.

Regarding the indurated erythematous lesions on the legs, it was necessary, on account of the varicose veins, to consider the possibility of cellul-o-phlebitis as suggested by Dr. Pollitzer, chiefly on account of the rather rapid development and the fact that they were too well defined. Regarding the rapidity of development, Dr. Mac Kee said that the lesions presented the present appearance when they were first noticed several weeks ago and he thought that they had been present for many months but overlooked by the patient. Their location, absence of pain, excepting upon pressure, and the dull red color had suggested to Dr. Mac Kee the diagnosis of erythema induratum of Bazin. These lesions, also, had appeared to improve under anti-syphilitic treatment. He would continue the present treatment and follow the advice of Dr. Pollitzer regarding bandaging and rest, and would again report the case at the next meeting of the Section.

Pemphigus. Presented by DR. POLLITZER.

The patient was a married woman, Russian, aged forty-five. The

disease began with a single bleb on the chin about August 1, 1909. This was soon followed by a large number of blebs on the lower part of the face, later on the scalp, and recently on the arms, shoulders and back. When first seen three weeks ago there were present about ten large, tense bullæ on the face, scalp and arms, the partly healed remains of many more, and on the shoulders and back, in addition to a few blebs, numerous gyrate and irregular erythematous patches resembling an exudative erythema. On the mucosa there was one bleb on the left cheek, and a superficial excoriation where a vesicle had recently formed. The patient suffered greatly from itching, and few of the lesions remained unscratched and intact. A blood count showed an eosinophilia of $8\frac{1}{2}$ per cent.

DR. AITKEN regarded this as a case of dermatitis herpetiformis on account of the inflammatory nature of the lesions, their grouping, and the intense itching.

DR. POLLITZER said that when first seen by him, this case, with its circinate erythematous lesions, was still more suggestive of dermatitis herpetiformis than at present. Pemphigus may begin in the same way, however; he had reported a death from pemphigus in a case which began as a typical polymorphous, erythematous, bullous dermatosis. He based his diagnosis on the presence of well-marked blebs on the mucous membrane of the mouth, a symptom which does not occur in dermatitis herpetiformis.

Tuberculide. Presented by DR. WILLIAMS.

The patient was a girl eighteen years old, born in the United States. Her father's first wife and his two children by her had died of tuberculosis. The patient's mother had died in childbirth. Her father was healthy and sixty-seven years old. She had had measles in infancy, but this had not been followed by a chronic cough. For about two years she had had a chronic naso-pharyngeal catarrh. Her menses began when she was about fifteen years old and continued until about three months ago, when they ceased. She had always had poor control of the sphincter of the bladder and this had been worse for about two months. The eruption had been present for two or three years, now better, now worse, but never disappearing entirely. It involved principally the arms and legs, and consisted of small, firm, slightly inflamed papules, which developed a scab at the apex, and then healed leaving a small scar. The lungs and the lymphatic glands were normal. She had lost ten or fifteen pounds in weight in the past three months.

Case for Diagnosis. Presented by DR. TRIMBLE.

The patient, a young woman, aged twenty-two years, had upon the outer aspect of the right thigh a number of hypertrophic lesions about the size of a split pea, some larger, which were intensely itchy and which had existed for ten years. The greatest number was in a group

about the size of the palm, on the lower part of the thigh. They were slightly scaly, very much indurated and livid in color. There was a cicatrix, showing where one lesion had been removed and a number of telangiectases, produced by the X-ray, the patient having previously undergone a number of exposures.

DR. OULMANN said that he considered this a case of granulosis cutis. He had seen a similar case in Boston at Dr. White's clinic which had been described as lichen obtusus. Dr. Veiel who had seen the case too, agreed with the diagnosis of granulosis cutis. These lesions were induced by scratching, in chronic itchy conditions. He excluded lichen planus hypertrophicus on account of the absence of any single lichen planus lesion, and of any improvement in the lesion, or of the itching under continued X-ray treatment.

DR. AITKEN regarded this as lichen planus hypertrophicus on account of the hardness, the pigmentation, the elevation above the skin, the intense itching, and the violaceous tint.

DR. MAC KEE was inclined to agree with Dr. Aitken, that this, possibly, was a case of lichen planus hypertrophicus of unusual type. The intense pruritus, the marked lichenification and the violaceous color would make one think of such a diagnosis.

DR. POLLITZER said that the absence of all improvement under X-ray treatment spoke against a diagnosis of lichen planus hypertrophicus. He suggested the possibility of a dermatitis factitia; the lesions were such as might be produced by persistent external irritation such as scratching.

DR. TRIMBLE said that he considered this an atypical case of lichen planus hypertrophicus. Johnston, and later Schamberg, had called attention to a condition known as multiple tumors of the skin associated with itching, and some members of the New York Dermatological Society, where the patient had been previously shown, thought that this was a case of that kind.

Sarcoma Apparently cured by the X-Ray. Presented by DR. DITTRICH.

The patient was from Dr. Geyser's clinic, where she had been treated with the Cornell X-ray tube. She was a Russian, forty-five years of age, married and had had six healthy children and one miscarriage. There was no history of tumor in her family. Two and a half years ago she noticed a small, hard mass at the inner canthus of the right eye which remained stationary for one year, but then grew rapidly, until it measured an inch or more in diameter. In the third year the lymphatic glands on the corresponding side commenced to swell and one was of the size of a large plum. For the tumor around the eye, the X-ray was applied about twenty times, fifteen minutes each. The glands had eight treatments, eight or ten minutes each. There was no sign of any dermatitis because of the special care taken to secure the close application of the tube to the tumor and skin.

DR. GEYSER stated that this case presented by Dr. Dittrich had been sent from the eye department to the X-ray department of the Cornell Clinic with a diagnosis of inoperable sarcoma of the orbit, inoperable on account of the location and the amount of tissue requiring removal. At that time the entire region of the orbit presented a stony-hard mass of three years' standing, the

size of an ordinary baseball cut in half, with the lid occupying its centre, but immovable. The patient had not seen daylight with this eye for one and a half years. With very little hope of doing much good the Cornell tube was placed in direct contact with the parts twice each week, each time for about eight minutes. After sixteen treatments the contour of the orbit was again normal; the sight was perfect, even better than the other eye. She was now being treated for some enlarged submaxillary glands which were responding to the same method of treatment, yet there was not the slightest sign of a radio-dermatitis nor had there been at any time.

Annular Syphilide of the Face. Presented by DR. KINGSBURY.

The patient was a negress, twenty-nine years of age. She had been married six years but had never been pregnant. She stated that she had had the "ringworms" on her face for about three months and gave a history of having previously had some eruption of a different character on her body and around the genitals. When presented, there were several pigmented areas on her chest and back, but there was no evidence of any active lesions on the trunk or extremities. The face, however, was practically covered by a very typical as well as beautiful eruption of the annular variety.

DR. HUBBARD said that he had found this a very common lesion in negroes. He had seen three cases in the Irish, in a year's service of about fifty new cases, and therefore did not consider it excessively rare in white adults. He believed that it was a symptom which occurred in neglected cases, which explained its frequent occurrence in negroes, who were notoriously careless, and that it was very common in infants of both the white and black race.

DR. OULMANN said he had seen a great number of cases of syphilis in the Santé publique service of Nuernberg, at Dr. Joseph's clinic in Berlin, and again in this country, yet in all he had seen not more than ten or twelve cases presenting an annular syphilide.

DR. KINGSBURY said that he had seen but one white adult presenting a well-marked annular syphilide. That case was shown by him at a meeting of the Manhattan Dermatological Society and was reported in the July, 1909, number of *THE JOURNAL*.

CHARLES M. WILLIAMS, M. D., *Secretary.*

REVIEW
of
DERMATOLOGY AND SYPHILIS

Under the Charge of GEORGE M. MAC KEE, M.D.

GENERAL THERAPY

By DR. EDWARD PISKO.

Treatment of Skin Diseases with Carbon Dioxide Snow. L. ZWEIG.
München. med. Wchnschr., 1909, lvi, No. 32, p. 1642.

Zweig says they are using the snow according to Pusey's and Zeisler's publications, in the same way and for the same diseases as the Americans. Two factors are to be considered: the time and the pressure; and the diseases of the skin in question can only be the circumscribed ones: 1. Nævi of any kind; 2, angiocavernoma and telangiectases; 3, lupus erythematosus; 4, lupus vulgaris and tuberculosis verueosa cutis; 5, epitheliomata.

Zweig explains the effect of this new method by assuming that resorption takes place in the pathological cells, especially in the pigment cells, because it is these cells which are most influenced in all these diseases, when treated with this low temperature. The advantage of this method is, that the snow is cheap, simple, and harmless.

Removal of Superfluous Hairs by Improved Methods. A. H. PIRIE.
Lancet, 1909, clxxvi, No. 4477, p. 1752.

Pirie uses, instead of a needle, a fine wire (the wire supplied with the finest hypodermic needle is a suitable one) the blunt point of which is better than the sharp point of the needle, and is not likely to leave the hair follicle and make a false passage. The wire should be insulated by using shellac, leaving only the last one-sixteenth of an inch naked after heating the wire to red heat in a Bunsen flame, and the current is then applied by the tip of the wire only. The advantages of this method are two: first, no scarring after the operation and second, a lower per cent. of regrowth of hairs.

Treatment of Syphilis by Mergal. H. ZECHMEISTER. *München. med. Wchnschr.*, 1909, lvi, No. 30, p. 1574.

Zechmeister reports 35 cases treated in the tropics. Mergal is well borne and digested, when given in a gelatine capsule, and he considers it to be the best mercurial preparation for internal use and advises 4

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to 5 mergal courses for the first year. He quotes Rosenbach who reported a case of gumma of the retina cured by the drug.

The Treatment of Skin Diseases by Radium. L. WICKHAM. *Lancet*, 1909, clxxvii, No. 4484, p. 398.

The apparatus used for radium treatment consisted of, first, radium contained in glass tubes which can be introduced into the passages of the body or into tumors, and second, radium in varnish, either in the form of a rigid apparatus with a metallic base or spread on some flexible material such as linen. Since the introduction of filtration by a screen of aluminium, lead or other substances, radium-therapy has made great progress. When a superficial action is desired no filter should be used. This method is used for superficial conditions, such as lichenification of the skin, etc. For deeper conditions, such as epithelioma, a thin filtration is advisable. Thick filtration, where only very penetrating rays pass through, is employed for deep-seated growths. The radium emanation may also be used and radio-active waters and other radio-active substances might be of great service in skin diseases.

The Treatment of Nævi and Other Cutaneous Lesions by Electrolysis, Cautery and Refrigeration. E. R. MORTON. *Lancet*, 1909, clxxvii, No. 4501, p. 1658.

In a period of six years 2000 cases of nævi have been treated. The methods employed were electrolysis, puncture with a fine galvano-cautery and the high-frequency spark. Electrolysis is reserved for the cavernous type of nævus. It is claimed that recurrences never occur after this treatment. The majority of cases can be dealt with by means of a fine galvano-cautery, its chief value being in the treatment of capillary and stellate nævi. Morton insists on going right through the skin, as it is otherwise impossible to be sure that the nævus will be affected through its entire thickness and, secondly, because there is less after-pain. The high-frequency spark (fulguration) is advised for port-wine marks, where the growth involves the superficial layers of the skin. The author has found carbon dioxide snow of service in many diseases. Various forms of nævi and other blemishes, lupus erythematosus and verrucæ have been successfully healed by this method. The ultimate result is a pale, soft, pliable and elastic scar, which is as good as or better than that produced by any other caustic or even in the case of radium.

Leprosy Treated with Antileprol. E. BEY. *Monatsh. f. prakt. Dermat.* 1909, xlix, No. 7, p. 290.

Antileprol, a purified preparation of chaulmoogra oil, was given in gelatine capsules from two to five grains each, according to the age. The class of patients treated was the poorest and most unclean. The

result of the experiments covering a period of over two years was very satisfactory; the nodules and infiltration disappeared and so did the nervous symptoms. There were no gastric disturbances produced. The patients had relapses when the drug was discontinued, but they always showed marked improvement upon a renewal of the treatment. It is of the greatest importance to make the diagnosis as early as possible in order to start the drug at once, and it should be continued for years.

The Treatment of Lupus Erythematosus. M. MORRIS. *Lancet*, 1909, clxxvii, No. 4491, p. 911.

The treatment of lupus erythematosus is unsatisfactory because so little is known as to its ætiology. There is no specific for the disease, the treatment consisting of various constitutional and local measures. The bowels should be kept regulated, the buccal cavity should be kept clean and alcohol and other stimulants avoided. The diet must also be regulated in each individual case, and the patient should lead an out-of-door life. Salol, in doses of ten grains three times a day will often be found of service. Where there is any abnormality of circulation, ichthylol, as recommended by Unna, in doses of from two to five grains after meals may prove efficacious. In regard to local treatment, it may be said generally that in the early stages active interference often does harm; no ointments should be used as a rule. In the hyperæmic stage, cooling lotions should be applied. Ichthylol, in the form of a lotion, has almost a specific action on the circulation. In chronic cases, also, the constant application of a strong solution of ichthylol was found to be of great benefit. Resorcin, salicylic acid, pyrogallic acid, the Finsen light, and the high-frequency current, have all been found useful in chronic cases. The X-ray should never be employed. Radium may be applied to limited areas.

PHYSICAL THERAPEUTICS

By FRED WISE, M. D.

On the Radiotherapy of Ringworm; Criticisms Made Upon It; Accidents Which May be Caused by It; and Means to Prevent Them.

R. SABOURAUD. *Annal. de dermat. et. de syph.*, 4th series, 1909, x., No. 7, p. 452.

The author discusses three important questions in connection with his method of treating tinea capitis by means of the X-ray.

1. Can radiotherapy of ringworm produce cerebral lesions in the patients treated by this method? (Sabouraud here takes it for granted that the radiometer-pastilles of Sabouraud and Noiré are employed in the application of all exposures.) He states that no case in France has ever come under his notice, in which any brain injury followed irradiation of

the scalp for ringworm, but he mentions one case, reported by Bloch (*Arch. f. Dermat. u. Syph.*, 1908, xciii, p. 157); and another case, reported by Rasch, of Copenhagen. In the first case, a meningitis developed, ten days after an X-ray exposure of the scalp; in the second case, an attack of pyromania was said to have followed an irradiation. Sabouraud does not attach any importance to these two reports, and considers the occurrence of these disturbances as merely coincidental.

The author calls attention to the experiments carried on by MacLeod, who employed the Sabouraud and Noiré pastilles in his work. This, now well-known, radiometer is based on the fact that a change of color occurs in a disc or pastille of platino-cyanide of barium which has been exposed to the X-rays. If a pastille of a certain color (teinte A), is placed at a fixed distance from the anti-cathode, in the path of the X-rays, its color will gradually alter, and assume the color of the standard pastille (teinte B). When this change of color has occurred, it is an indication that the scalp of the patient has received a dose of X-rays sufficient to cause a defluvium of the hair within the next fifteen days, and a regrowth within the next two or three months.

Mac Leod's experiments demonstrated that no injury is done to the cerebral tissues by Sabouraud's method of treating ringworm of the head.

Sabouraud states, further, that in over 2500 cases of tinea capitis, treated in France since 1903, he has not seen a single case, in which a brain injury resulted from the irradiations. In sixteen cases of idiocy, epilepsy and other cerebral diseases, in which a cranial operation was performed, in children who had previously been X-rayed for ringworm, no changes in the tissues underlying the cranium could be demonstrated. In a large number of other children, who were treated for various ailments, subsequent to the courses of radiotherapy for ringworm, no lesions or disturbances which could be laid at the door of radiotherapy, ever manifested themselves. Even in poorly nourished and rachitic children, in whom the fontanelles were still evident, no ill-effects were noted after X-ray treatments. Nor did any trouble arise in a few cases in which a double dose of X-rays was inadvertently applied to the scalp. In a word, Sabouraud insists that the effect on the brain and meninges of this mode of treatment, is not to be considered.

2. Radiodermatitis and subsequent alopecia. With regard to X-ray burns, the author argues that no radiodermatitis will occur, if the operator understands the correct method of using the radiometer. Here he quotes Adamson, who says that, "By the introduction of the Sabouraud and Noiré radiometer as a means of measuring X-rays, the dangers of the treatment have disappeared, in the hands of the trained operator." But accidents can occur, even when the radiometer is employed. Among the causes of these accidents, he cites the following: Certain radiometers on the market are supposedly made after the method of Sabouraud and

Noiré, but are "counterfeits," and are not only valueless, but give the operator a sense of false security.

The author's pastilles of platino-cyanide of barium are incorporated with amyl-acetate in collodion, while the imitations are made with various other chemicals, which respond to the action of the rays in such a manner, that no true measure can be obtained by the variations in the tints of the affected pastilles.

In the early forms of the Sabouraud and Noiré radiometer, the standard color (*teinte B*) represented the maximum dose that could be applied to the scalp with safety. Many operators, however, regard the "*teinte B*" as only a medium dose, thereby causing a dermatitis from over-exposure. The radiometers manufactured in the last three years, contain a standard "*teinte B*," representing a medium dose, which is just sufficient to produce depilation, thus avoiding a repetition of this error.

The pastille should be so placed with reference to the tube, that it occupies a point midway between the anti-cathode and the most prominent point of the scalp exposed to the X-rays, otherwise the results are at fault, and the patient's scalp is either under- or over-exposed.

The position of the pastille must be such that it intercepts, as nearly as possible, the bundle of central rays, reflected from the anti-cathode, and not the oblique rays.

While using the radiometer, the pastille either should be covered with black paper, or the exposure should take place in a semi-darkened room.

The comparison of the exposed pastille with the standard tint, should take place in daylight, never in artificial light. It is therefore advisable not to give treatments after sundown. The frequent removal of the pastille, for purposes of comparison with the standard, while the exposure is going on, should be avoided.

Other causes of radiodermatitis are: The inadvertent repetition of an irradiation, over an area or areas previously exposed. This may be avoided by marking the treated areas with a skin-pencil, and making a written note of the area exposed. Those areas which have been irradiated must be covered with lead-foil, while other areas are being treated. The circular localisers which support the head of the patient, must be adjusted with care, so that the middle of the exposed area, as well as its periphery, intercepts the normal quantity of X-rays. Scalps which exhibit inflammations or irritations due to some previous treatment by means of chemicals, should not be irradiated until the inflammation has subsided entirely.

3. Can permanent alopecia be produced without the occurrence of radiodermatitis? The author has observed such an occurrence under two conditions: 1. Where two successive irradiations were given to the

same region of the scalp, with too short an interval of time allowed to elapse between séances. 2. Where faulty tubes have been used; and where the source of current has been insufficient, certain operators have shortened the distance between the anti-cathode and the patient's head in order to lessen the duration of the séance. Theoretically, this seems to be a proper procedure, but it does not always follow that the proper dosage is obtained when the pastille is placed midway between the anti-cathode and the scalp. Without apparently exceeding the normal dose, permanent alopecia, without radiodermatitis, may be produced, when the pastille is placed at a distance less than 15 centimetres from the anti-cathode. With modern forms of self-regulating and self-cooling tubes, capable of supplying the maximum dose in 7 minutes, or less, it is advisable to lengthen the distance between the anti-cathode and the scalp, to 20 centimetres. By this means, the short rays, which impinge on the scalp, can be eliminated, without their penetrating to the tissues underlying the skull.

The author does not favor the belief in the existence of an individual idiosyncrasy to the action of X-rays, but he states that undoubtedly certain portions of the scalp, as the temples and back of the neck, are more sensitive to the rays than are the other portions.

It is important to become acquainted with the degree of dermatitis required to produce a complete defluvium of the scalp. The slightest redness requires 5 or 6 days in which to subside. When the redness exists for a period of 13 to 18 days after exposure, the return of the hair will be retarded by about two months, and the re-growth may be scattered and incomplete. Should the redness persist for three weeks, even without the least evidence of ulceration, usually no re-growth of hair will take place.

In normal cases the scalp presents a pinkish-brown color on the day the defluvium occurs; this color gradually fades within three days, an almost imperceptible exfoliation of the scalp taking place at the same time.

In summing up, the author states that the chances for accidents are reduced to a minimum by the following factors:

1. Use a high-tension current of electricity, which is maintained at as constant a number of interruptions as is possible.
2. Employ a millampére meter to measure the amount of the current used.
3. Never give an exposure without a radiometer, and become familiar with the color-variations of the pastilles and their relative tints, as compared with the standard "teinte B."
4. Do not be timid in giving exposures.
5. Become thoroughly conversant with the causes of the accidents, in order to be able to best avoid them.

The X-Ray Treatment of Ringworm of the Scalp, with Special Reference to the Risks of Dermatitis and the Suggested Injury to the Brain. J. M. H. MAC LEOD. *Lancet*, 1909, 1, No. 20, p. 1373.

The author recounts his experience in the treatment of over 370 cases of tinea capitis. He employs the single-dosage method of Sabouraud, using the radiometer-pastilles of Sabouraud and Noiré, to measure the dose of X-rays. By this method the average time required to cure a case of ringworm of the scalp is three months, whereas formerly about eighteen months were required to cure cases treated by the application of ointments, oils, etc. In the ringworm school at Paris, the average cost, per child, was 2000 francs before the X-rays were employed; the X-ray method has brought about a reduction of the cost to 260 francs per capita.

According to Mac Leod, with the proper utilization of Sabouraud and Noiré's Radiometer all risk of producing X-ray burns is eliminated. He cautions against the irradiation of a scalp which has previously been inflamed by external remedies, such as iodine, croton oil, chrysarobin, etc., as burns are much more prone to develop in such cases. Should a marked dermatitis develop with the employment of Sabouraud's method of single-dose exposures, the cause lies either in simple over-exposure, or in the fact that the regulation distance of the scalp from the anti-cathode (15 centimetres) has not been adhered to by the operator.

In discussing the suggested risk of injuring the brain tissue of the child by X-ray exposures of the scalp, the author states that he never has heard of a case in which such an injury, or an arrest of brain development, has taken place. He, however, avoids the exposure of children under three years of age, in whom the skull is thin, and the fontanelles not yet closed. On this subject he quotes Sabouraud, who states, that in five years' experience during which 3000 children were treated by X-rays, no nervous derangement, nor arrest of development, has come under his notice.

Mac Leod describes a series of experiments which he carried out, in which he made tests of the quantity of X-rays absorbed by the scalp and skull. He concludes from his experiments that the scalp and meninges afford sufficient protection to the underlying tissues to preclude any possibility of injuring the brain cortex in the slightest degree.

A Simplified Method of X-Ray Application for the Cure of Ringworm of the Scalp (Kienböck's Method). H. G. ADAMSON. *Lancet*, 1909, i, No. 20, p. 1379.

The author describes a time-saving method (first suggested by Kienböck, of Vienna), for the treatment of ringworm of the head in children, by producing depilation by means of X-rays. With the use

of the radiometer of Sabouraud and Noiré, together with Sabouraud's circular localizers, 10 to 12 exposures are required, each of 15 minutes' duration, to depilate the entire scalp. Adding to this the time required for adjusting the localizers to each area, the average time necessary for complete depilation is from $3\frac{1}{2}$ to 4 hours.

By Adamson's method, only 5 exposures are necessary to depilate the entire scalp, thereby reducing the time of irradiation to $1\frac{1}{2}$ hours. He dispenses with the cylindrical localizers, and applies the X-rays in such a manner that, in those sections of the scalp where overlapping of exposed areas occurs, the incidence of the rays is so oblique, and so much further from their source, that the dose of X-rays impinging on these overlapping parts is not excessive, but just sufficient to cause a defluvium of the hair.

The author describes in detail (with a diagram), the division of the scalp into five segments, marked off with a skin-pencil after having had the hair clipped off short. These five segments—namely the vertex, occiput, lower occiput, right side, and left side,—are each given, in succession, one Sabouraud pastille dose of X-rays, with the anti-cathode at a distance of $6\frac{1}{2}$ inches from the nearest point of the exposed part of the scalp. Diagrams of these segments are shown, with the five points, situated at the intersections of the areas. These points are taken as centres of sections to be irradiated; the relative position of scalp and tube being such, that the nearest point on the scalp is at right angles to a line joining the anti-cathode with each of the central points of the adjoining segments.

A shield is used to protect the back of the neck, forehead and eyes. The tube is enclosed in a box shield, having an aperture 3 inches in diameter, at a distance of $3\frac{1}{4}$ inches from the anti-cathode.

To this shield are attached three pegs made of soft wood, against which the scalp rests, so that the head is retained throughout the exposure, at a distance of $6\frac{1}{2}$ inches from the anti-cathode.

Each irradiation of a certain segment must be directed at right angles to the irradiation of adjacent segments, the rays to be directed toward the outer margin of each area, thereby allowing half the dose to strike the scalp, the other half striking the shield which covers the face and neck.

By this means, each segment of the scalp will receive in succession one dose of X-rays, measured by a Sabouraud pastille.

The Analogy Between Spontaneous Recoveries from Cancer and the Specific Immunity Induced by X-Ray Irradiations of the Lymphatic Glands Involved. H. D. McCULLOCH. (*Brit. Med. Jour.*, October 17, 1908.)

McCulloch, in his collaboration with MacGillycuddy, has exposed

the enlarged glands in the neighborhood of malignant growths to the X-rays in hopes of producing antibodies or other substances that might aid nature in combating the disease. For evidence as to improvement, it was necessary to depend upon a careful observation of the clinical symptoms, for there was no opsonic index that could be used as a guide, as in tuberculosis, acne vulgaris, etc. They treated four cases of laryngeal cancer in this manner, and in every instance the patient recovered. The treatments were confined to the enlarged glands, the other tissues, including the lesion itself, being carefully screened off with lead foil. In the first case two affected glands were noted. They each received four 15-minute exposures of 5 H. units, at intervals of eight days. Improvement began immediately, and was continuous, until the lesion entirely disappeared. At the time the report was made seven months had elapsed without signs of renewed activity of the growth. The other three cases were treated in the same manner, with practically the same results. Inasmuch as it was impossible to obtain specimens for microscopic examination, the diagnosis in each case was made from a clinical examination.

The author calls attention to the fact that in cases of spontaneous resolution, the malignant tumors are usually associated with marked glandular involvement, and insinuates that the early activity of the lymphatics is physiological and protective, rather than pathological, and that in this stage they should not be removed. He states, also, that fasting, the iodides, trypsin, amylopsin and papain all act as resolvents, and may effect a resolution of malignant tissue, and insinuates that the antigen elaborated in the deep lymphoid structures, being of a colloid nature, can not be diffused until the impervious encapsulating tissues are opportunely resolved. He believes that the X-ray is capable of effecting this purpose, much in the same manner as in the case of the proteolytic enzymes, only that it is possible, in the former instance, to accomplish the desired result in a few weeks.

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NO. 5

THE ELASTIC TISSUE OF THE SKIN.

BY CHARLES J. WHITE, M. D., Boston.

Instructor in Dermatology in Harvard University.

(Continued from page 173).

CARCINOMA.

No. 205. Pre-cancer. An oval nodule from the site of a previous excision for cancer (?) from the temporal region of a woman, aged fifty-five.

Hæmatoxylin-eosin. Just below the rete there are almost continuous areas of loose, delicate elacin.

Weigert-hæmatoxylin-Van Gieson. Here the elacin areas assume a greenish tint and appear as compact amorphous masses. Elastin is present as delicate fibres much scattered by numerous indefinite areas of cellular infiltration from which it has entirely disappeared. It is, on the other hand, very sharply preserved in the adnexa of the skin.

Cases A, B, C, D, E, S, T, U, 124, S-08-1016.

Spinocellulare. Hæmatoxylin-eosin. No elacin.

No. 146. Cancer en cuirasse (chest, man, aged fifty). Hæmatoxylin-eosin. No elacin. Acid Orcein. Elastin retained throughout the whole depth of the sections, but presenting the most delicate picture of sparse and most tender twigs. In the papillæ there is usually one long fibril clearly stained, but unique. The subpapillary zone contains slender, delicate but sparse fibres. Below this layer elastin appears in somewhat larger fibres, but always diminished in numbers. The elastic tissue disappears from the majority of cellular foci but is retained around the follicles and in some of the vessels, but is absent except for an occasional dot in the panniculus adiposus.

J. In skin of breast. Basocellulare. Hæmatoxylin-eosin. No elacin.

K. From sweat glands. Basocellulare. Hæmatoxylin eosin. No elacin.

L. Tongue. Spinocellulare. Hæmatoxylin-eosin. No elacin.

M. Vulva. Basocellulare. Hæmatoxylin-eosin. No elacin.

S-02-751. Spinocellulare. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. The tumor has flattened and thinned the epidermis. For the most part the tumor or the accompanying lymphocytes reach quite up to the rete, but here and there are occasional strands of collagen with or without elastin, while here and there appear islands of elastin. Throughout the tumor one sees a rare fibril of elastin, and even less often one of collagen lying between the groups of cancer cells. Below the tumor and to either side elastin and collagen appear in normal quantity. The elastin lines and surrounds the vessels and forms an envelope to the sweat glands.

S-08-468. Nose. Spino- and basocellulare. Hæmatoxylin-eosin. No elacin. Weigert-hæmatoxylin-Van Gieson. Here again the inflammatory cells reach quite to the rete, and for the most part have absolutely replaced collagen and elastin; nevertheless there are occasionally strands of both these elements just below the rete and running more abundantly up into the papillæ which are well preserved. In this case collagen has suffered even more than elastin. In the tumor proper elastin and collagen are infinitely reduced, the latter especially being almost non-existent. Although this observation is correct for the most part, nevertheless there is an uncommon amount of these elements to be noted between and overlying the cancer cells. This is a decided departure from the usual interrelation of cellular invasions and elastin.

S-08-218. Basocellulare. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. No elastin within the cancerous area. To each side and below the superficial growth elastin is normal in amount and distribution.

198. Basocellulare. Hæmatoxylin-eosin. No elacin.

O. Spinocellulare. Hæmatoxylin-eosin. Elacin is present as swollen, pale basic-staining fibres in the subpapillary layer.

P. Basocellulare. Hæmatoxylin-eosin. Elacin as in previous case. In these examples elacin is separated from the rete by a narrow zone of rarefied collagen.

Q. Basocellulare. Hæmatoxylin-eosin. No elacin.

R. Back of hand. Spinocellulare. Hæmatoxylin-orcein. Here the elastic tissue is reduced to a meagre amount in the papillary layer and below the rete plugs. While absent from many papillæ, others



THE ELASTIC TISSUE OF THE SKIN.

show coarse fibrils running vertically upward with horizontal offshoots.

In the upper corium there are areas where elastin appears as occasional delicate fibrils, while again at this level there are large masses of coarse bundles almost completely obscuring the underlying cells. These foci are very striking. Elastin does not occur within or immediately around the numerous pearls, but between these whorls there are occasional or abnormally numerous fibres of elastic tissue running in the midst of the invading epithelial elements. In the foci of invading lymphoid cells elastin is and is not present. Elastin occurs in normal abundance about the sweat glands and to a very meagre extent about an ascending tubule.

V. Spinocellulare. Hæmatoxylin-eosin. No elacin.

Acid Orcein. Elastin is practically absent from the papillæ and in conjunction with the interpapillary plugs. Below an intervening narrow zone of collagen, elastin appears in huge masses in the midst of and sometimes almost completely obscuring the underlying lymphoid infiltrations. It surrounds the follicles, sweat and sebaceous glands and appears in great superabundance throughout the middle and deep corium, except in the epithelial clumps where it is almost absent, save for a few surrounding fibrils.

W. Ulcer. Basocellulare. Hæmatoxylin-eosin. In the mid-corium are three large foci composed of coarse, swollen, pale, basophilic fibres (elacin), much interlaced in all directions, resembling a bundle of entangled earthworms.

X. Forehead. Basocellulare. Hæmatoxylin-eosin. No elacin.

Y. Breast. Spinocellulare. Hæmatoxylin-eosin. No elacin.

Z. Nose. Basocellulare. Hæmatoxylin-eosin. To either side of the tumor there is much elacin in the upper and middle layers of the corium. The fibres are loose and pale and constitute the greater mass of the corium.

Orcein-polychrome blue-tannin orange. The basic staining corium, noted in the hæmatoxylin-eosin sections, takes the orcein stain and forms clumps through the upper and middle layers to each side of the tumor. In addition, near the rete, there are numerous scattered fibres of elastin. These fibres take a much deeper and sharper stain than the elacin. Throughout the tumor masses there is no elastin, but in the large foci of surrounding lymphocytes there are a few scattered fragments of elastin and elacin.

No. 98. Recurrence in male breast after excision. Spinocellulare. Hæmatoxylin-eosin. No elacin.

No. 99. Neck. Man, aged sixty-five. Hæmatoxylin-eosin. Large round bundles of elacin appear in the upper corium.

No. 138. Same as No. 99. To the side of the basocellular growth there are frequent foci of elacin, forming, in fact, an almost continuous band of pale, basic-staining, cloudy tissue almost homogeneous in structure.

Acid orcein-polychrome blue-orange tannin. The elacin areas stain as darkly as normal elastin, and present solid and continuous masses a short distance below the rete. Between this stratum and the rete and between and below the foci of epithelioma appear normal fibres of elastin.

No. 141. Behind the ear. Basocellulare. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is absent from the upper layers everywhere. In the mid-corium there are a few scattered foci in the tumor region, but to each side there is a somewhat increased amount, while below elastin appears in normal amount.

No. 163. Back of hand. Spinocellulare. Hæmatoxylin-eosin. No elacin.

Acid orcein. Above the numerous epithelial pearls there is a normal amount of elastin, but among the pearls there are a very few scattered fibrils faintly stained.

No. 165. Face. Woman, aged forty-eight, six to seven years' duration. Basocellulare. Hæmatoxylin-eosin. No clacin.

Acid orcein. The tumor constitutes practically the whole picture and between the separate large epitheliomatous masses are septa containing varying quantities of elastin.

No. 185. Eyelid. Woman, aged forty-five. Three years' duration. Basocellulare. Hæmatoxylin-eosin. No elacin. Weigert-hæmatoxylin-Van Gieson. Above the tumor and to either side there is a fine continuous line of elastin in the papillary remnants, and in the immediately underlying rete. In places elastin consists of short, vertical fibrils. Below this level appears a narrow zone of collagen free from elastic elements and still deeper one sees scattered small foci of elastic bundles. Throughout the tumor mass itself no elastin appears.

S-08-543. Nose. Spinocellulare. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Above the tumor are a few scattered foci of swollen, short elastic fibres, but next the rete

they are reduced to a minimum. Throughout the tumor in the interlying cellular masses are scattered remnants of elastin but none in the tumor proper.

No. 189. Naso-labial fold. Woman, aged fifty. X-rays for many weeks. Basocellulare. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. To each side and below the tumor mass there is a normal amount of elastin in the papillary and subpapillary layers, while below the new growth there is a conspicuously increased amount of elastic tissue—the fibres being curly and black. There are some fibres in the tumor itself.

No. 190. Ulcer in naso-labial fold. Man, aged sixty. Long-continued treatment with X-rays. Spinocellulare. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Elastin is absent from the vicinity of the rete. Below, in the upper corium, there is an accentuated amount of elastin which is cloudy and stains palely. In the mid- and deep corium elastin is more normal in amount and staining reaction. Amidst the tumor cells there is a comparatively large number of elastic fibrils.

No. 198. Spinocellulare. Weigert-hæmatoxylin-Van Gieson. Practically no elastin appears.

EPITHELIOMA ON TUBERCULOSIS.

Cases A, B, C, D.

Tongue. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. In the area affected by these two processes there is total absence of elastic tissue at all levels. To either side of the tumor masses there are superficial foci of pale-staining, rather swollen fibres, and below, the elastic element is somewhat sparse and stains poorly.

EPITHELIOMA ON XERODERMA PIGMENTOSUM.

Ulcer. Basocellulare. Hæmatoxylin-eosin. No elacin. Acid orcein-polychrome blue-orange tannin. Between the abundant epitheliomatous masses, even where lymphocytes are more or less abundant, there are numerous elastic fibres.

EPITHELIOMA ON SYPHILIS.

No. 127. Basocellulare. Hæmatoxylin-eosin. No elacin. Cancer five weeks, syphilis six months. Old serpiginous syphilide. Hæmatoxylin-eosin. No elacin.

No. 196. Primary lesion. Nine months. Chin. Spinocellulare. Hæmatoxylin-eosin. No elacin. Weigert-hæmatoxylin-Van Gieson. Elastin is reduced to a few scattered fibrils in the infiltrate of syphilis. None are seen in the epitheliomatous tissue.

EPITHELIOMA ON MOLLUSCUM FIBROSUM.

No. 102. Basocellulare. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is entirely gone from above and within the main masses of epithelioma. Between the numerous small epitheliomatous foci to one side appear occasional fine fibrils. Below the epithelioma elastin reappears in practically normal amount.

CLAVUS.

Hæmatoxylin-eosin. No elacin.

COLLOID DEGENERATION.

Hæmatoxylin-eosin. No elacin in the most advanced area, but to one side of a dividing follicle there are abundant, coarse, swollen, vertical, basic-staining fibres separated from the epithelium by a narrow zone of collagen.

Weigert's elastic stain. Elastin never touches the rete, being separated by a very narrow band of normal collagen. Below this zone elastin appears in places as a dense amorphous mass separating the more superficial normal collagen from the subjacent structureless colloid material. In other fields the elastic fibres stand more isolated as abnormal, delicate tendrils running vertically downward and disappearing in the shapeless colloid mass below. Around the limiting follicle elastin with elacin appear as described in the hæmatoxylin sections.

CONDYLOMA ACUMINATUM.

Hæmatoxylin-eosin. No elacin.

CORNU CUTANEUM.

Hæmatoxylin-eosin. No elacin.

CYLINDROMA.

Cases A, B, C. Hæmatoxylin-eosin. No elacin.

DERMATITIS CALORICA (BURNS).

Cases A, B, C, D, E, F. Hæmatoxylin-eosin. In five cases no elacin.

Sixth case. Some distance to one side of the vesicle is a comparatively wide zone in which the typical, swollen, rather amorphous, basophilic fibres appear (elacin). It is not a deep zone. In places it touches the rete, in others it is separated by a narrow layer of collagen.

DERMATITIS EXFOLIATIVA.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin appears in great abundance throughout the sections. It never touches the atrophic epidermis which is always separated from the elastic tissue by a zone of lymphocytic infiltration. The uppermost elastic fibres are delicate but stain sharply and are well preserved. Throughout the corium there are foci of lymphocytes and these same cells have thickly invaded the numerous groups of sweat glands and the deeper-lying fat areas. With a few exceptions elastin has disappeared from these areas. Vessels when present, and when not surrounded by lymphocytes, present a normal amount of elastin.

DERMATITIS HERPETIFORMIS.

Negro. Hæmatoxylin-eosin. No elacin.

Acid orcein. In the papillary and subpapillary layer elastin is reduced to a few minute granules or short delicate lines, and this is the area of somewhat dilated vessels with surrounding cellular invasions. The vesicle present lies just below the rete, and here elastin is absent, except for a few insignificant granules. Deeper down, elastin is normally abundant and well preserved as a rule, but there are numerous small vessels with wide areas of surrounding lymphocytes and from these areas elastin has entirely gone.

No. 2. A woman. Hæmatoxylin-eosin. No elacin.

DERMATITIS HYSTERICA.

A young hysterical girl with recurring bullæ. For the first year the disease was limited to the right upper extremity; in the second year the right lower extremity; and in the third year the right chest. The present lesion is a beginning bulla on the chest. Histologically one sees a lysis of the lower rete and upper corium about a hair follicle.

Hæmatoxylin-eosin. No elacin.

Weigert's elastic stain. Throughout the section elastin is normal even up into the papillæ, although it is here slightly decreased in amount. In the abnormal, rarified and slightly infiltrated area around the follicle described above elastin still persists though reduced in amount.

Acid orcein-methylene blue-orange tannin. Here again the affected follicular region shows only a trace of elastin in the form of scattered, barely perceptible, short threads.

DERMATITIS MEDICAMENTOSA.

Potassium iodide. Hæmatoxylin-eosin. No elacin.

DERMATITIS PAPILLARIS CAPILLITH.

Hæmatoxylin-eosin. No elacin.

DERMATOLYSIS.

Hæmatoxylin-eosin. No elacin.

Weigert's elastic stain. Elastin is well preserved to the very tip of the papillæ and along the epidermal border of the interpapillary zones. The subpapillary layer is perhaps hyperplastic and even below this level elastin is abnormally abundant, but in the deeper layers of the corium the elastic fibres are absent, except within a few vessels and around some particularly deep sebaceous glands. As a rule, however, the deep collagenous bundles show no accompanying elastin.

DERMOLYSIS.

[Vide author's article *Jour. Cut. Dis.*, July, 1908.]

1st stage.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is well preserved but very scanty in the papillæ and along the boundary line of rete and corium. The subpapillary layer is devoid of elastin to a large extent but the few fibres present are sharp and clear. In the upper horizontal vascular zone the elastic fibres are more abundant though still below the normal in number and remain well marked. Lower still, elastin is rather sparse owing to its fusion with collagen to produce collastin.

2d stage.

Histologically but little change. Hæmatoxylin-eosin. No elacin.

Acid orcein. Papillary and subpapillary elastin is rather diminished in amount but the individual fibrils stain sharply and are not swollen. Below, throughout the corium, elastin is very much diminished in amount because the larger portion of the elastic element has combined with collagen to make coarse, swollen fibres of collastin.

3d stage.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin presents the same picture seen in the second stage. In the most affected area elastin and collastin consist of loose, short isolated rods and S-shaped fibres.

DIPHTHERIA. (ULCER OF SKIN.)

Hæmatoxylin-eosin. No elacin.

Acid orcein. In the non-ulcerated portion of the sections there is a rather diminished quantity of delicate, pale fibrillæ in the papillæ and closely adjacent to the stratum germinativum of the inter-papillary plugs. The subpapillary elastin varies in amount and the fibres are universally horizontal. Throughout the underlying corium the elastic elements are greatly increased in amount and form long, almost straight, horizontal fibres, relatively more abundant than collagen.

In the ulcerative portions of the sections there are areas of narrow, nearly solid masses of elastin just below the floor of cellular and bacterial detritus. Between these areas the elastin shrinks to a normal amount but is still strikingly abundant. Below this uppermost layer, where elastin varies so much in quantity, the elastic element appears universally in abnormally large amounts throughout the whole section while collagen is relatively diminished. Where, however, there are foci of cellular infiltration the elastic elements fail utterly, except for a few straggling elements and this relative persistence is noted within the vessels also where the elastic tunic is well preserved. Some of the deep vessels show an astonishing amount of elastin and the fibrous network of the panniculus adiposus is more than normally supplied with elastic elements.

ECZEMA.

No. 88. Chronic and follicular.

Hæmatoxylin-eosin. Where the acanthosis is most accentuated there are a few delicate and a few coarse fibres of elacin and the former are more numerous and are noted deeper in the corium than often happens.

Weigert's elastic stain. The picture is a peculiar one. In the papillary and subpapillary layers elastin stains very diffusely and seems perhaps rather abnormally abundant, but instead of presenting the usual delicate, sharply stained threads it appears as a dull-grey, watery, loose network throughout these upper layers. Through the corium as a whole elastin is more normal in appearance and amount and presents itself as long curvilinear fibres or short rods. Around the coil glands and within the vessels the elastic element is universally abundant but assumes the striking, diffuse appearance already described in the superficial corium.

No. 106. Moist eczema of breast resembling Paget's disease.
Hæmatoxylin-eosin. No elacin.

Acid orcein-methylene blue-orange tannin. Despite the great acanthosis, the ill-defined demarcation of rete and corium, and the abundant, diffuse lymphocytic infiltration of the upper corium the papillary and subpapillary elastin is preserved and appears as delicate tendrils forcing their way between extravasated cells almost to the apices of the papillæ and vertically and transversely below the interpapillary plugs. Deeper in the corium the elastin appears more disorganized and appears in places as short, broken and rather distorted, abnormally delicate fibres, much diminished in amount.

SCALP. Hæmatoxylin-eosin. No elacin.

IMPETIGINOUS. Hæmatoxylin-eosin. No elacin.

MADIDANS. Hæmatoxylin-eosin. No elacin.

UNIVERSAL. Hæmatoxylin-eosin. No elacin.

ECZEMA MYCOTICUM.

Hæmatoxylin. One small focus of elacin is present.

ECZEMA SEBORRHŒICUM.

Hæmatoxylin-eosin. No elacin.

ELACIN.

A. Nodule from nose. Diagnosis uncertain. Pathologically, there exists a central focus of lymphocytes extending to the entire depth of the corium with occasional giant cells—a granuloma.

Hæmatoxylin-eosin. The epidermis is gone. In the upper corium, indistinctly visible through the cellular focus, and standing clear and distinct in the non-cellular portions of the sections, appear narrow and deep foci of amorphous, faintly staining, basic tissue.

In the middle and deep corium this material appears as isolated or grouped twisted strands. This is a very unusual situation for elacin and well-marked and sharply demarcated fibres are also seldom seen in degenerated elastic tissue.

Acid orcein-methylene blue-orange tannin. Except on the extreme edge of the sections, well beyond the central ulcerated granuloma, there is no suggestion of elastin. Just below the epidermis is a very narrow zone of collagen. Then come large and deep and irregularly bounded, gelatinous, blue masses of elacin practically excluding any vestiges of collagen. In the middle and lower two-thirds of the corium collagen reappears, but here there are small lakes of amorphous basic material, and occasional deeply stained, well-differentiated, twisting fibres of elacin.

Weigert's elastic stain. To either side of the central granulomatous, ulcerated focus are wide and deep amorphous areas of faintly stained elastic tissue. The high power discloses a mass of worm-like, swollen threads. Throughout the granuloma there are occasional strands of elastin.

This obscure granuloma, then, is characterized by an unusual amount of elastin and elacin.

B. Nodule from face. Diagnosis uncertain. Pathologically, a pouring out of lymphocytes around the vessels and around the sweat glands. To one side there are a few clumps of nævoid cells.

Hæmatoxylin-eosin. Immediately below the epidermis there is a narrow zone of collagen, and then begin the masses of elacin extending to some depth across the sections and separated here and there by sweat tubules, follicles or ascending vessels. These foci consist almost exclusively of faintly staining, basic, short, swollen fibres. In places all semblance of individual fibres ceases and we find amorphous masses of this material—elacin. Deeper down in the corium are a few isolated, well-preserved, basic-staining, convoluted fibres.

C. Shallow ulcer of the back of a woman aged 63. This was thought clinically to be an epithelioma, but microscopically such a diagnosis is not tenable.

Hæmatoxylin-eosin. The floor of the ulcer is formed by an almost continuous and deep band of elacin. In this upper and middle portion of the corium there are bands and streaks and islands of collagen. Nuclei are abundant and persistent, but the great mass of the tissue consists of swollen, short, faintly staining basic

material—elacin. In places all normal configurations are lost and we find only an amorphous mass. Even in the depths of the corium where collagen has for the most part reasserted itself there are coarse bands of elacin.

Weigert's elastic stain. The picture is a striking one. The upper third of the corium consists of almost solid areas of elastic tissue in which separate but swollen fibres appear. Deeper down, elastic tissue occurs in coarse masses running in irregular streaks—fine, delicate, individual fibres seldom appearing except in connection with vessels and sweat glands.

ELEPHANTIASIS.

- A. Foot. Hæmatoxylin-eosin. No elacin.
- B. Labium majus. Hæmatoxylin-eosin. No elacin.
- C. Scrotum. Hæmatoxylin-eosin. No elacin.
- D. Vulva. Hæmatoxylin-eosin. No elacin.
- E. Leg. Hæmatoxylin-eosin. No elacin.
- F. Thigh. Hæmatoxylin-eosin. No elacin.

No. 193. Weigert-hæmatoxylin-Van Gieson. Elastin is absent in the papillary layer. None appears about the follicles or sebaceous glands or muscles or sweat glands with only an occasional suggestion about the upper and middle vessels. Elastin does exist infrequently in the middle and lower corium. Here the fibres are of varying lengths from dots to long straight filaments.

ENDOTHELIOMA.

- Cases A, B. Hæmatoxylin-eosin. No elacin.

EPITHELIOMA BENIGNUM CYSTICUM.

No. 78. Hæmatoxylin-eosin. The corium, for a varying depth below the rete, is composed of loose, delicate, rather swollen, basic-staining fibres, *i. e.*, elacin.

Acid orcein-polychrome blue-orange tannin. The subrete corium shows an abundant layer of elacin as a pale staining structure. Elastin is reduced to a minimum and appears here and there in the infiltrated tissue between the epitheliomatous plugs.

A. Acid orcein-polychrome blue-orange tannin. Elastin is absent.

Hæmatoxylin-eosin. Below the rete there is a focus of faint, basic-staining tissue—elacin.

Nos. 153, 224. Serial sections. A very minute tumor from the breast of a young woman, one of several hundred.

Hæmatoxylin-eosin. No elacin.

Phosphotungstic-hæmatoxylin. Elastin has not stained.

No. 203. The tumor from the face of a man, aged twenty, shows conclusively its direct growth from the rete.

Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Where the underlying tumors have not obliterated the papillæ elastin is very sharply and abundantly preserved. Where lymphocytes are present the elastic element is greatly reduced. Within the epithelial cluster no elastin can be seen, although it still persists as an enveloping membrane about the hollow cysts.

ERYSIPelas.

Hæmatoxylin-eosin. No elacin.

ERYTHEMA.

A. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is present in all layers of the corium but in a very moderate amount. In the deeper layers the fibres are often short or even dots rather than elongated normal fibres.

B. Hæmatoxylin-eosin. No elacin.

ERYTHRODERMIE PITYRIASIQUE EN PLAQUES DISSÉMINÉE.

A. Hæmatoxylin-eosin. No elacin.

Weigert's elastic stain. Elastin is present everywhere but in diminished amounts, especially in the papillary and subpapillary layers.

B. Hæmatoxylin-eosin. No elacin.

Weigert's elastic stain. Elastin is slightly diminished.

No. 87. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is present everywhere but diminished in amount, especially in the papillary and subpapillary layers.

Weigert's elastic tissue stain. Elastin slightly diminished.

No. 119. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is present everywhere but slightly diminished in the papillary and subpapillary layers.

FIBROMA.

A. Hæmatoxylin-eosin. No elacin.

No. 154. Multiple fibromata. A pure fibroma.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is present in the papillæ in normal amount and forms a continuous line dividing rete and corium. It is extremely abundant in the subpapillary layer, forming a striking picture. Throughout the corium in the area of the fibromatous change elastin has disappeared, except for a few scattering dots, but is present again deeper down around the sweat glands and within the small vessels.

No. 162. Ala nasi. Very loose connective tissue. Considerable cellular invasion.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is entirely absent except in the lowest layers of the corium, and here it is not universally present.

B. A solid fibroma extending almost to rete.

Hæmatoxylin-eosin. No elacin.

C. More mollusciform. Hæmatoxylin-eosin. No elacin.

D. Fibromatous. Hæmatoxylin-eosin. No elacin.

No. 132. Mollusciform. Much cellular infiltration.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is practically absent in places, in others normally abundant and accompanied by much collastin.

No. 101. Mollusciform and nævoid. Much cellular infiltration.

Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is absent from the papillary layer but persists though reduced in the lower layers.

No. 112. Multiple tumors. Purely fibromata.

Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is much reduced, almost to obliteration in the papillary and subpapillary layers.

NEURO-FIBROMA.

A. Hæmatoxylin-eosin. No elacin.

FORDYCE'S DISEASE.

No. 118. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is absent except for a minute amount in one or two papillæ.

No. 133. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is very much reduced, in places absent.

FRAMBÆSIA.

A. Hæmatoxylin-eosin. No elacin.

B. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Elastin has disappeared entirely from within the granulomatous areas, save for a few vestiges of poorly staining granules or short, swollen strands. Below the cellular masses elastin resumes a fairly normal aspect, although never abundant or deeply stained.

FURUNCULUS.

Cases A, B, C. Hæmatoxylin-eosin. No elacin.

HERPES ZOSTER GANGRÆNOSUS.

Hæmatoxylin-eosin. No elacin.

HYPERIDROSIS.

Hæmatoxylin-eosin. No elacin.

ICHTHYOSIS.

Hæmatoxylin-eosin. No elacin.

IMPETIGO.

Hæmatoxylin-eosin. No elacin.

KELOID.

A. Hæmatoxylin-eosin. No elacin.

No. 142. Hæmatoxylin-eosin. No elacin.

Acid orcein. No elastin whatever.

KERATOSIS.

Hæmatoxylin-eosin. No elacin.

KERATOSIS (FOLLICULARIS?).

A. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is gone from the papillæ and is somewhat reduced in the corium as a whole.

B. Hæmatoxylin-eosin. No elacin.

KERATOSIS SENILIS.

No. 95. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is gone except in the deep corium, and even there it is very rare.

A. Hæmatoxylin-eosin. Elacin is abundant along the width of the subpapillary layer.

LEIOMYOMA CUTIS.

A. Hæmatoxylin-eosin. No elacin.

Weigert's elastic stain. A few scattered, very long, good-sized fibres of elastin appear, but over large areas elastin is totally absent.

LEPRA.

No. 157. A leproma with papillæ flattened out. The typical infiltration is separated from the epidermis by a narrow band of normal collagen.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is present in normal amount in the subpapillary layer but is absent throughout the leproma. Elastic elements reappear in normal amount below the nodule. A few fibres of collastin are present in the leproma.

No. 164. Ulcer. Syphilis and leprosy. Infiltration is very slight.

Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is present beyond the ulcerated area but within the ulcerated portion it is absent in the upper two-thirds of the corium and normal in amount in the lower third.

A. Hæmatoxylin-eosin. No elacin.

No. 108. Anæsthetic pigmented macule. Moderate cellular invasion throughout the corium.

Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is absent in the subpapillary layer and in the upper two-thirds of the corium is reduced to rare, almost invisible fibrillæ. In the region of the sweat glands elastin reappears as feebly stained fibres.

No. 202. Leproma from eyebrow. Verhoeff's stain [IKI-hæmatoxylin-ferric chloride. Collagen yellow to red, elastin black]. Elastin is entirely wanting except below the granulomatous area and then only a few stray, long, delicate fibres appear. Collagen is

almost equally wanting. No elastin in the neighborhood of the rete, although lepra does not quite touch the epidermis.

No. 201. Nodule from face.

Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Lepromatous tissue leaves an uninfiltrated zone in the subpapillary layer. Here in the papillary layer there is an increase of elastin. Below, there are septa of collagen containing elastin, but still deeper down in the region of the leprous nodules there is a total absence of elastic tissue.

LICHENIFICATION.

A. Hæmatoxylin-eosin. No elacin.

No. 123. Hæmatoxylin-eosin. No elacin.

LICHEN OBTUSUS CORNEUS.

No. 150. Hæmatoxylin-eosin. No elacin.

Phosphotungstic acid-hæmatoxylin. Delicate but sparse fibres of elastin appear throughout the entire depth of the corium.

Acid orcein. Elastin present in goodly amount in all layers of the corium and in connection with all its appendages.

LICHEN PLANUS.

A, B. Hæmatoxylin-eosin. No elacin.

C. (Annularis). Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is absent entirely in the subpapillary zone of infiltration but present in normal amount below.

No. 129. (Hypertrophicus). Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is much reduced in the papillary layer but perhaps increased in amount in the underlying corium.

LYMPHANGIOMA CIRCUMSCRIPTUM.

A. Hæmatoxylin-eosin. No elacin.

No. 112. Hæmatoxylin-eosin. No elacin.

Weigert's elastic stain. Elastin is present except around the lymph vesicle and in the infiltrated areas.

B. Hæmatoxylin-eosin. No elacin.

No. 93. Arm. Hæmatoxylin-eosin. No elacin.

Weigert's elastic stain. Elastin is reduced to a minimum through the whole depth of the vesicular area but is rather hyperplastic beyond.

LYMPHANGIO-ENDOTHELIOMA.

Case A, B. Hæmatoxylin-eosin. No elacin.

LYMPHANGITIS.

No. 140. Ulcer. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is reduced almost to nothing in the ulcerated area but hyperplastic in all the layers of the corium at the border of the ulcer.

LYMPHOCYTOMA.

S-08-218. Weigert-hæmatoxylin eosin-Van Gieson. Elastin is totally absent.

MACULA CERULEA.

Hæmatoxylin-eosin. No elacin.

MILIARIA.

Cases A, B, C, D. Hæmatoxylin-eosin. No elacin.

MOLLUSCUM CONTAGIOSUM.

A. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is absent.

B. Hæmatoxylin-eosin. Elacin is present in large amounts as areas of cloudy, swollen fibres throughout the whole depth of the corium.

Acid orcein-polychrome blue-orange tannin. Elastic tissue has not taken the stain.

C. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. No elastin.

Cases F, H, I, L, M, and No. 86. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. No elastin.

J. Van Gieson. No elacin.

Acid orcein-polychrome blue-orange tannin. No elastin.

K. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. No elastin.

No. 168. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is present in normal amounts.

No. 173. Penis of negro. Acid orcein. Elastin is much diminished on each side of the growth, but below and beyond the immediate vicinity of the tumor it is hyperplastic.

S-09-39. Hæmatoxylin-eosin. No elacin.

MORBILLI.

Hæmatoxylin-eosin. No elacin.

MORBUS ADDISONII.

Cases A, B. Hæmatoxylin-eosin. No elacin.

MYCOSIS FUNGOIDES.

Cases A, B, C, D, E. Hæmatoxylin-eosin. No elacin.

No. 111. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. In the upper layers of the corium and deeper down between the granulomatous foci there is a much reduced amount of delicate elastic fibres. In the granulomata themselves there is no elastin.

No. 122. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Here the granulomatous area is spread out and very superficial and in this delicate granuloma there are scattered, delicate, vertical elastin fibrillæ. Below this level elastin appears in abundance.

No. 140. Hæmatoxylin-eosin. There are short fibres of elacin present.

Acid orcein. Throughout the very dense granulomatous area there are a few thin, straight, long fibres of elastin.

No. 437. (After X-rays.) Hæmatoxylin-eosin. No elacin.

Acid orcein. In places elastin is almost hyperplastic and in others it appears in abundant foci or as a few scattered fibres.

No. 159. Hæmatoxylin-eosin. No elacin.

Acid orcein. In the granulomatous area elastin is totally absent but in the neighboring tissue elastin becomes hyperplastic.

No. 195. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. In the granuloma only a very occasional straight fibril appears; but below, a well-marked elastic layer is everywhere apparent.

Phosphotungstic acid-hæmatoxylin. The same condition is visible but elastin stains in much smaller quantities.

NÆVUS PILOSUS ET PIGMENTOSUS.

A. Hæmatoxylin-eosin. No elacin.

No. 200. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Here there is hyperplasia of elastin which forms trabeculæ between which lie the cellular foci

and hair follicles. Even in the cellular foci there is considerable elastin but it is most delicate.

NÆVUS. (With or without pigment.)

No. 107. Hæmatoxylin-eosin. No elacin.

No. 116. Hæmatoxylin-eosin. No elacin.

Acid orcein. No elastin can be seen in the cellular and pigmented areas; but below, elastin is well marked.

No. 188. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. In the narrow band of collagen in the upper cellular corium there is an occasional elastic fibril and throughout the deep layer of cells there are scattered septa of collagen and of elastin. In other words, elastin is diminished almost to nothing.

No. 184. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Elastin is reduced almost to zero in the cellular area; while below, there is a normal amount of elastic tissue.

No. 197. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. There are many scattered cellular foci through the corium and elastin is much diminished everywhere and in the cellular foci almost absent.

No. 77. Acid orcein-polychrome blue-orange tannin. Conspicuously separate cellular foci appear and contain here and there an occasional delicate fibril of elastin. Between the numerous cell nests there is an abundance of very delicate elastin.

M. Hæmatoxylin-eosin. One focus of elacin.

NÆVUS VASCULOSUS.

Cases A, B. Hæmatoxylin-eosin. No elacin.

PAGET'S DISEASE.

No. 177. Right flank. Hæmatoxylin-eosin. No elacin.

Acid orcein. There is a wide band of lymphocytes below the oedematous and degenerated epidermis. Immediately subjacent to the rete are scattered, well-preserved elastic fibrils. Through the cellular layer elastin stains as a mere shadow and is much reduced in amount. Below the cellular layer and through the rest of the corium there is a normal amount of elastin, but an extraordinary amount of collastin.

No. 139. Right labium majus. Hæmatoxylin-eosin. No elacin.

Acid orcein. A wide band of lymphocytes appear below the absent or almost obliterated epidermis and elastin is absent throughout this layer: while below, there is a great increase in elastin.

No. 139. Clitoris. Hæmatoxylin-eosin. No elacin.

Acid orcein. A narrow band of lymphocytes is seen below the epidermis and here no elastin is present except for the most delicate, faint fibrils seen within the vessels. Below the cellular layer there is a great increase of elastin.

No. 144. Hæmatoxylin-eosin. No elacin.

Acid orcein. Here there is but very little cellular infiltration while the epidermis is riddled with holes. The upper half of the corium is very dense and this area is totally devoid of elastin: while below, by degrees, there is marked hyperplasia of the elastic element.

PARAPSORIASIS.

No. 147. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is present in normal amount.

PEMPHIGUS.

Cases A, B, C. Hæmatoxylin-eosin. No elacin.

PEMPHIGUS FOLIACEUS.

A. Hæmatoxylin-eosin. No elacin.

PITYRIASIS ROSEA.

No. 117. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is reduced to a few fragmentary dots in the papillary and subpapillary layers. Below, the corium presents a slightly diminished amount of elastin.

PITYRIASIS RUBRA PILARIS.

No. 69. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is present in normal amounts, except in the papillary and subpapillary layers where it is possibly slightly diminished.

A. Hæmatoxylin-eosin. No elacin.

PRURIGO.

A. Hæmatoxylin-eosin. No elacin.

B. Hæmatoxylin-eosin. Elacin is present in one focus as a circumscribed amorphous area with many nuclei.

PSEUDO-LEUKÆMIA.

Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Elastin is normal in all respects except for a tendency to disappear as an envelope around some of the sweat glands whose cells have somewhat degenerated.

PURPURA.

A. Hæmatoxylin-eosin. No elacin.

RHINOPHYMA.

No. 90. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is reduced to a minimum next the epidermis (no papillæ on account of pressure from below). In the subpapillary layer above the deep layer of hyperplastic sebaceous glands and vessels there is a focal increase of elastin. Between and below the sebaceous glands elastin is distinctly diminished.

SARCOMA.

A. Giant cell. Hæmatoxylin-eosin. No elacin.

B. Fibro cell. Hæmatoxylin-eosin. No elacin.

No. 130. Spindle cell from a pigmented mole of the face. Age fifty.

Hæmatoxylin-eosin. There are numerous scattered areas in the upper corium of pale, homogeneous, amorphous basic tissue, i. e., elacin.

Acid orcein. These superficial foci of elacin form practically solid, almost black masses. Elastin is practically gone from the sarcomatous areas save for a few scattered threads and between them there is a moderate amount of elastin; while below, elastin also appears but in conjunction with considerable collastin.

B. Fibro cell. Hæmatoxylin-eosin. A large area of coarse big fibres of elacin is present.

Cases C, D, E. Hæmatoxylin-eosin. No elacin.

LYMPHOSARCOMA.

No. 142. A, B. Hæmatoxylin-eosin. No elacin.

MYXOSARCOMA.

A, B. Hæmatoxylin-eosin. No elacin.

MELANOTIC SARCOMA.

A to E. Hæmatoxylin-eosin. No elacin.

SPINDLE CELL SARCOMA.

No. 79. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. No elastin whatever.

PERITHELIAL SARCOMA.

A. Hæmatoxylin-eosin. No elacin.

B. Hæmatoxylin-eosin. The subpapillary layer shows much elacin.

No. 92. Hæmatoxylin-eosin. No elacin.

SCLERODACTYLIA.

A. Hæmatoxylin-eosin. No elacin.

SCLERODERMA.

A. Hæmatoxylin-eosin. Fine threads of elacin appear in the upper corium.

B, C. Hæmatoxylin-eosin. No elacin.

No. 75. Acid orcein-polychrome blue-orange tannin. Elastin is present in goodly amount everywhere but as delicate though abundant fibres in the papillary and subpapillary layers.

SYPHILIS.

Cases A to E. Primary lesion. Hæmatoxylin-eosin. No elacin.

SECONDARY LESIONS.

Condyloma latum. Hæmatoxylin-eosin. No elacin.

Papule of scrotum. Hæmatoxylin-eosin. No elacin.

Papule. Hæmatoxylin-eosin. No elacin.

Papule of scalp. Hæmatoxylin-eosin. No elacin.

Serpiginous. Hæmatoxylin-eosin. No elacin.

Serpiginous lesion of arm. Hæmatoxylin-eosin. No elacin.

Chronic œdema of prepuce. Hæmatoxylin-eosin. No elacin.

Lioderma. Hæmatoxylin-eosin. No elacin.

Tubercle of leg. Hæmatoxylin-eosin. No elacin.

Acid orcein. The upper infiltrated portion of the skin is utterly devoid of elastin but below this level elastin is distinctly abundant.

LATE LESIONS.

Gumma. Hæmatoxylin-eosin. No elacin.

Ulcer. Hæmatoxylin-eosin. No elacin.

Ulcer of forehead. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. A generally indefinitely infiltrated tissue which shows only occasional elastic fibres where extravasated cells are very sparse.

No. 135. Nodule of back. Hæmatoxylin-eosin. A suggestion of elacin is present but very poorly marked.

Acid orcein. Elastin is abundant and very sharply stained even in the papillæ, where it is unusually evident. In the cellular areas, however, elastin is absent.

No. 182. Late nodule. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. The papules show a well-preserved elastic layer along the sides next to the rete, but in the middle layers, where cellular invasion exists, this tissue disappears. In the subpapillary layer, where there is a well-marked deepish layer of infiltrated cells, elastin is reduced to a minimum, appearing as broken rods. Below this zone elastin appears in normal amounts.

No. 183. Gumma (Scalp). Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Elastin is totally absent except for two or three foci, one next the rete, and two in the midst of the deep cellular area.

No. 204. Nodule from a large group on the back. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Elastin has practically disappeared, except for a few delicate fibrils just below the rete and around the deep follicles. This is due to the large infiltrative character of the lesion.

SYRINGOCYSTOMA.

No. 134. Chest. Hæmatoxylin-eosin. There is no well-differentiated elacin, but collagen as a whole in the region of the epithelial bodies is somewhat swollen and tends to absorb the basic rather than the acid stain.

Acid orcein-polychrome blue-orange tannin. Elastin is abundant everywhere and around almost all of the epithelial bodies there is an envelope of elastin which might not be true if these were tricho-epitheliomatous in nature as believed by some writers.

Weigert-hæmatoxylin-Van Gieson. Same picture as above but the epithelial bodies are not present in these sections.

TINEA TRICOPHYTINA.

- A. Scalp. Hæmatoxylin-eosin. No elacin.
- B. Beard. Hæmatoxylin-eosin. There are many well-differentiated fibrils of elacin, quite isolated throughout the papillary and subpapillary layers.
- C. Non-hairy skin. Hæmatoxylin-eosin. No elacin.

TINEA VERSICOLOR.

Hæmatoxylin-eosin. No elacin.

TUBERCULOSIS.

SCROFULODERMA.

Cases A, B. Hæmatoxylin-eosin. No elacin.

No. 121. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin appears in a few foci as clumped, swollen, pale-staining fibres.

LUPUS VULGARIS.

Cases A to F. Hæmatoxylin-eosin. No elacin.

No. 76. Acid orcein-polychrome blue-orange tannin. Elacin is absent.

G. Hæmatoxylin-eosin. No elacin.

After the von Pirquet Test.

No. 199. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. A few faint elastin fibres appear in the papillæ but throughout the diffuse granuloma elastin is reduced to two or three scattered foci of well-preserved clustered fibres.

TUBERCULOSIS VERRUCOSA.

Cases A, B. Hæmatoxylin-eosin. No elacin.

TUBERCULIDES.

ACNITIS.

Face of a man, aged fifty-eight. Hæmatoxylin-eosin. Through the width of the section in the subpapillary layer there are large square blocks of coarse, short, twisted, pale, basic-staining elacin.

Weigert's elastic stain. The areas of elacin form pale masses

under this dye. Through the cellular infiltrated areas of the corium elastic tissue has entirely disappeared but in the deep corium it reappears in its normal form.

Methylene blue-acid fuchsin-tannin. The elacin picture is similar to that of the hæmatoxylin-eosin stain.

No. 97. A typical case from the forehead with giant cells, etc. A papule from the temporal region in a younger man. Here there is one small area of basophilic elastic tissue, *i. e.*, elacin, separated by a small zone of normal corium from the rete.

Weigert-hæmatoxylin-Van Gieson. Elastin is rarified along the epidermo-corium border and when present consists of a few very delicate fibres. In the one papilla present there is an abundant amount. In the upper corium there is an abundance of coarse, short, convoluted fibres. Where the cellular infiltration appears the fibres are practically totally absent, save in a few scattered places where one notes an occasional delicate fibril. The section is not deep enough to include the fat or sweat glands or larger vessels, so that one cannot observe the behavior of the elastin in these structures.

FOLLICLIS.

- A. Thigh of a child. Hæmatoxylin-eosin. No elacin.
- B. Chest of a man, aged fifty. Hæmatoxylin-eosin. No elacin.

No. 174. A. An early stage from the leg. Hæmatoxylin-eosin. No elacin.

B. Later stage from foot. Hæmatoxylin-eosin. No elacin.

Acid orcein. Beyond the focus of infiltration elastin is in normal amount but accompanied by much collastin. In the cellular area elastin is almost obliterated, except around the sweat glands where it is universally retained.

ULCUS MOLLE.

Cases A, B. Hæmatoxylin-eosin. No elacin.

URTICARIA.

No. 104. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is present in all layers but reduced to very delicate, long, straight fibrils.

URTICARIA PIGMENTOSA.

Cases A, B, C. Hæmatoxylin-eosin. No elacin.

VARIOLA.

Cases A to E. Hæmatoxylin-eosin. No elacin.

VERRUCA.

A, B. Hæmatoxylin-eosin. No elacin.

No. 114. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is present.

No. 160. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is hypertrophic except in the infiltrated foci, where it is entirely absent.

No. 161. Hæmatoxylin-eosin. No elacin.

Weigert-hæmatoxylin-Van Gieson. Elastin is present in normal amount in the adjacent in-curved papillæ, but is reduced to a minimum in the corium below the centre of the wart.

No. 5241. Hæmatoxylin-eosin. Elacin is very abundant, occurring throughout the whole section but especially to each side of the hypertrophied epidermis in the subpapillary layer and in the tissue supporting the deep vessels. In these areas elastin appears as a delicate reticulum while in the focus below the wart proper the pathological mass is more amorphous.

Weigert-hæmatoxylin-Van Gieson. Elastin is fairly well preserved in the papillæ but in the corium proper and especially in the deeper layers is much reduced in amount.

VITILIGO.

Hæmatoxylin-eosin. No elacin.

XANTHOMA PALPEBRARUM.

A, B. 54. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Elastin is absent except in the deep corium where normal, but somewhat sparse, long, straight and tortuous fibres appear. In places where there is evident fatty degeneration there are no elastic fibres.

No. 74. Hæmatoxylin-eosin. No elacin.

Acid orcein-polychrome blue-orange tannin. Here there are scattered, very large and straight, or curved fibres which absorb the blue and not the orcein stain. What are these? Not elacin because they are not tinted by hæmatoxylin, and therefore not collagen; not elastin, because the Weigert stain does not reveal them and therefore not collastin. Are they mucin?

Weigert's stain. Throughout the section, except in connection

with a deep sweat gland area, there are only negligible quantities of pale, broken elastin remnants but in the depths of the corium, however, normal elastin reappears.

No. 149. Hæmatoxylin-eosin. No elacin.

Acid orcein. In the papillary and subpapillary layers there are only faint traces of elastin. In the deeper corium there are wide oval areas from which elastin has gone and between these foci elastic tissue reappears in the form of exceptionally long, straight, abundant fibres. In the end stage, *i. e.*, fat, there is no elastin.

X-RAY DERMATITIS.

No. 576 C. Wrist. Hæmatoxylin-eosin. No elacin.

No. 576. A to G. Finger. Hæmatoxylin-eosin. No elacin.

No. 576 C. Ulcer of hand. Hæmatoxylin-eosin. No elacin.

No. 576. Forehead. Hæmatoxylin-eosin. No elacin.

No. 576. A and B. Hand. Hæmatoxylin-eosin. No elacin.

No. 156. Ulcer of hand. Hæmatoxylin-eosin. No elacin.

Acid orcein. In the ulcerated area elastin is much reduced in amount, and over certain foci quite absent, but beyond the ulcer elastin is perhaps hyperplastic.

No. 180. Ulcer of leg. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin varies in amount. In foci of infiltration it is absent; elsewhere it is increased in amount, and appears as dark-staining, very tortuous and short, fine fibrils.

No. 180 B. Ulcer of leg. Hæmatoxylin-eosin. No elacin.

Acid orcein. There are areas with infiltration from which elastin has totally disappeared, but quite contiguously there are fields of increased elastin, and here fibrils stain extraordinarily sharply, and appear tightly curled.

No. 180 C. Ulcer of leg. Hæmatoxylin-eosin. No elacin.

Acid orcein. Similar to above.

No. 181. Dermatitis of leg. Hæmatoxylin-eosin. No elacin.

Acid orcein. Elastin is uniformly abundant and even hyperplastic.

CONCLUSIONS.

- Elastin first appears in the skin when the embryo has reached a length of 22 centimetres.

- Elastin has a distinct and multiple physiological function.

- Elastin is evident in practically every part of the normal corium, and in connection with all the adnexa of the skin, but in

this series of sections has never been noted within any part of the epidermis.

4. Acid orcein, plus some nuclear stain, seems to be the best stain for elastic tissue because it is very searching and because it differentiates well the various phases through which this tissue may pass. For the detection of elacin the simple haematoxylin-eosin stain appears the simplest and the best.

5. The part of the body from which the elastic tissue comes and the age and occupation of the individual all influence the condition of this structure and these factors should be borne in mind when investigating this element of the skin. Thus, disease, senility, unprotected surfaces of the body and long and frequent exposures to sun and wind all cause serious disturbances in the elastic element.

6. Disease seldom increases the amount of elastin, but on the other hand almost always causes a loss, the respective percentages of these variations in the present study being 5 and 95 per cent.

7. Elastin withstands pressure, but succumbs to chemical changes, in other words toxic products are the principal source of danger to this element.

8. Elastin disappears entirely from granulation tissue, but returns with the new connective tissue when the cellular invasion has subsided.

9. Elastin disappears with the advance of carcinomatous and other new growths into or within the corium, but fragments of elastin and elacin may be surrounded and enclosed with rapidly multiplying epithelial cells.

10. X-rays, except in the presence of infiltration or ulceration, tend to increase the amount of elastin.

11. Obliteration of a vessel entails diminution or loss of elastin.

12. Basophilic changes in elastin do not always occur at first in the centre of the bundles as stated by Unna.

13. Elacin is encountered mostly in men after middle age and in exposed surfaces of the skin, but can appear in youth.

14. Elacin in these 317 examples of varying dermatoses appears in 23 instances, *i. e.*, 7 per cent., and occurs for the most part in inflammations and in new growths.

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DISCUSSION.

DR. MARTIN F. ENGMAN said he would await the publication of Dr. White's complete paper with much interest. The elastic tissue had been a subject of great interest to him for a number of years, because he had been under the impression that it would be of value in the study of disease, and to a certain extent he had been able to verify that fact. In chronic eczema and in all vesicular conditions, as well as some of the bullous diseases, the elastic tissue seemed to be unaffected in the diseased areas, but in granulomatous conditions, especially in lichen planus, the elastic tissue appeared to be rather early affected. With its disappearance, a scar necessarily resulted. Although this might not be deep, still it would be there.

The staining of the elastic tissue, Dr. Engman said, was not very difficult. The two methods that he had employed were Unna's polychrome-acid-orcein method, and that of Weigert, the alum-carmine stain, which, with a little picric acid in the alcohol bath, gave a beautiful result.

The amount of work done by Dr. White in connection with the preparation of his paper was enormous, and deserved a great deal of credit.

DR. JAY F. SCHAMBERG said he was not present during the reading of the preliminary part of Dr. White's paper, but from what he did hear he had gained the impression that it contained some very valuable generalizations. It was important to obtain knowledge of the various morbid processes in which pathological changes in the elastic tissue might be expected, not only in clinical work but also in histological investigations, researches tending toward a simplification and generalization of findings, served the purpose of clarifying our understanding.

DR. WILLIAM A. PUSEY referred to the complex nature of the changes occurring in different parts of the skin, and their possible relationship to the efforts of the epidermal cells in trying to resist the inroads of micro-organisms. In herpes zoster, for example, the nuclei multiplied rapidly, and along similar lines Dr. White had shown the changes that occurred in the elastic tissue. There were probably also changes in the connective tissue itself, as well as about the lymphatic and blood vessels.

DR. WHITE said that in ninety-five per cent. of these various dermatoses the elastic tissue was affected—in quantity rather than in chemical composition. The changes observed were probably temporary, the elastic tissue probably returning to the normal with restoration of health. Of course, a great many sections were examined in the course of this work, and in connection with many of the diseases mentioned he was, perhaps, claiming too much from such meagre observations.

PRELIMINARY REPORT UPON A CASE OF MULTIPLE BENIGN CYSTIC EPITHELIOMA AND MULTIPLE FIBROMA IN THE SAME PATIENT.*

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THIS patient, Florence K., was first seen by me on February 23, 1907. Her parents are living and healthy; in neither family had there been any skin or malignant disease or similar tumors. The patient had always been in good health aside from the ordinary diseases of childhood. At this time she was twelve and one-half years of age, of healthy appearance, tall, rather stout and well developed for her age.

She and her mother both affirmed that the tumors first made their appearance when she was six or seven years old. They started upon the alæ of the nose and gradually increased in size and number till the nose was nearly covered and extended also upon the cheeks and upper lip.

STATUS PRÆSENS, March 10, 1907. The whole nose, except the upper one-half inch, was completely covered by sessile tumors, so closely set that no normal skin was left between. These tumors varied in size from that of a pin-head to about one-half inch in the long diameter. The lower half of the nose was irregularly enlarged, especially the left ala, producing a decided deformity aside from its nodular outline. There were several small, isolated growths upon the face and one confluent growth about one-fourth inch in diameter and nearly as high, upon the left half of the upper lip. The growths extended upon both cheeks, in the rosacea region, but here also they were isolated. A few small isolated tumors occupied the forehead and chin. About two and one-half inches to the right of the vertex there was a tumor on the scalp, about one-half of an inch in diameter and height, in which five or six hairs were implanted. None of these tumors were pedunculated, except that upon the scalp, and

* Read before the 33d Annual Meeting of the American Dermatological Association, Philadelphia, June 3-5, 1909.

this possessed a large pedicle. The largest tumors were located upon the left ala, where they were piled up, each succeeding tumor being more elevated, till, near the lower margin, their height was nearly one-half inch.

Their consistency was quite firm; much firmer than the ordinary fibroma. The skin overlying these growths was practically normal in texture and appearance, being slightly oily and of a pale pinkish color. There were no telangiectases. There has never been any pain nor discomfort. The patient had a very mild acne, particularly between the eyebrows.

These tumors gave the face a very repulsive appearance and the girl was greatly annoyed by the attention they attracted.

As it was impossible to make an absolute clinical diagnosis between multiple fibromata (which was my diagnosis at the time), adenoma sebaceum and multiple benign cystic epithelioma I made a section from the largest tumor of the left ala and sent it to Dr. Grover W. Wende for histologic examination.

He confirmed my diagnosis of fibroma. While treating the tumors lately with carbonic acid snow, I found a very curious variation in their response to treatment. While the large, confluent growths upon the nose yielded fairly readily, each application being followed by a decided diminution in their size, the smaller, isolated tumors upon the cheeks and about the angles of the eyes showed very slight, in some cases, no improvement. One of these lesions has been treated three times, forty seconds each time, at intervals of two weeks, with little diminution in its size or modification in its appearance.

Upon closer examination these tumors seemed to differ slightly from the larger tumors, being rather darker and less translucent. I therefore excised completely a small tumor from the cheek and sent it to Dr. Wende for examination. His histologic report follows:

"A specimen in two per cent. formalin received from Dr. Ruggles, March 3, 1907, was hardened in alcohol and embedded in paraffin, cut transversely (it resisting the knife markedly), and stained with haematoxylin-eosin. A median section at the centre showed loosely arranged thick collagen fibres. There was more space between them and more cells than one usually finds in the corium; the epidermal layer was normal. Even the imperfect examination to which the specimen was subjected established the fact that the condition was that of molluscum fibrosum.

"Tissue received May 15, 1909, from the same patient pre-

sented all the characteristics of multiple benign cystic epithelioma. There was very little change in the epidermis except a slight thinning. Throughout the entire corium, apparently leading from the basal cells of the epidermis, tracts of epithelial cells were discovered, somewhat resembling blood vessels, but, under the high power, they were found to be composed of epithelial cells. In these cord-like processes are apparent dilatations, consisting of masses of cells forming rings composed of large, columnar, epithelial cells. In places, cysts are noted in the centre of the epithelial masses, and, in a number of instances, "cell-nest" formations are present; in others these have undergone degeneration, enclosing horny, granular tissue. Beneath the epidermis are seen groups of giant cells, probably due to degenerated epithelial cells, presenting in places an appearance suggestive of tubercle or syphilitic gumma.

"The striking difference existing between these two specimens found in one patient suggests the theory of their correspondence, just as fibroma and adenoma sebaceum have been found associated in the same patient. These several conditions may be regarded as a congenital defect of development of the skin. If sufficient observations are made to establish this fact, it may be possible that the finding of fibromata and multiple benign cystic epithelioma—the origin of the latter being also congenital—may be regarded, in the case of Dr. Ruggles, as more than a mere coincidence."

The question of treatment in so extensive a case was puzzling. Curettage, excision, or any attempt at plastic surgery in this case would certainly have been followed by most unsightly scarring. I at first tried treatment by the high-frequency spark. This proved excruciatingly painful and the results were practically nil,¹ the growth returning in each instance. Electrolysis was then tried, many close, parallel punctures being made through the base of the largest lesions; this was followed by very slight decrease in size and, after quite a number of treatments, the patient became discouraged and discontinued her visits.

After learning, at the last annual meeting of the Association, of the remarkable results attained in various facial tumors by the use of carbonic acid snow, I decided to employ it upon this case. Having obtained the consent of the patient, treatment was begun on January 2, 1909, without, however, much confidence on my part in its success. With increasing age her conspicuous deformity was naturally causing the girl much greater embarrassment and mental

suffering, the attention which her condition attracted from strangers being very distressing to her.

There had been some increase both in the number and size of the lesions during the twenty months since last seen. The group of clustered lesions about the inner and outer angles of both eyes had increased in number and size, and the group of confluent tumors, elevated about one-eighth of an inch, occupying part of the right half of the upper lip, had increased so as to occupy about one-fourth of the whole lip. The tumor upon the scalp had enlarged to one-half inch in diameter and there were several new isolated lesions upon the face.

Last Saturday I excised the large tumor from the scalp and, in the area shaved for the application of adhesive straps, found two small, rounded tumors of millet-seed size, one of which I excised for examination. There were other small tumors upon the unshaven scalp and it is probable that they are scattered over its whole area. These tumors, particularly the large one, resemble the fibromatous variety.

Since January 2nd, she has received nine treatments with carbonic acid snow, at intervals averaging two weeks apart. These are quite painful and there is a marked reaction each time, causing her some suffering for two or three days and also considerable swelling of the whole nose.

Up to the present time scarring has occurred in the case of one small tumor only, although some redness of the lower half of the nose is present. The effect upon the larger lesions and also upon the smaller, contiguous lesions has been most striking. The size and contour of the nose are now perfectly normal, although it is still almost completely occupied by pin-head to shot-sized lesions, and her appearance is now so vastly improved that she attracts very little attention.

About two weeks ago I treated five of the epitheliomatous lesions by electrolysis, about as one would treat a mole. Two of these have disappeared, leaving no more trace than is usual with that lesion. The others, of equal size and, apparently, treated just as thoroughly, have been very little altered, except that the apex is slightly lower.

However, the whole condition is so greatly improved that I have strong hope of clearing up the case entirely.

This case presents several variations from any previously described. Confluent multiple fibromata of the face have only been

described previously, as occurring in the rare generalized cases with thousands of tumors, and fibroma of the nose is very infrequent. It is the first case recorded of multiple benign cystic epithelioma and multiple fibroma being associated in the same patient. The case developed at a much earlier period of life (at six or seven years of age) than any case of benign epithelioma except Jacquet's (at eight years). There were no central depressions, telangiectases nor milia upon any of the lesions, nor were any of the dark bodies described by Phillipson and Brooks present.

DISCUSSION.

DR. GEORGE T. JACKSON said he was glad to have heard Dr. Ruggles' testimony in regard to the use of carbonic acid snow in the treatment of skin diseases. This agent was not nearly so painful as the high frequency spark, and there was no doubt about its efficacy in the treatment of adenoma sebaceum. At present a case of the kind was being treated successfully at his clinic. The apparatus used by Dr. Ruggles was certainly ingenious, but not quite as simple as that of Dr. Hubbard. With the latter style of apparatus and a set of square and round moulds, cones of the snow could be made to fit lesions of any size or shape. As most of the lesions were more or less round or oval, the ordinary cylinder of snow made by the apparatus answered the purpose very well in a great number of the cases without even using the moulds.

DR. RUGGLES said he had also used carbonic acid snow in adenoma sebaceum with very good results, the tumors being flattened and the normal color of the skin regained.

PLATE XXXIII—To Illustrate Article by DR. E. WOOD RUGGLES.



FIG. 1.

PLATE XXXIV—To Illustrate Article by DR. E. WOOD RUGGLES.



FIG. 2.

CASES OF PSORIASIS WITH UNUSUAL SYMPTOMS AND HISTORY *

By WILLIAM F. BREAKEY, M. D., Ann Arbor, Michigan.

THE following cases are fair samples of a considerable number reported, some of them from memory, without details of pathology, chiefly because of conditions somewhat exceptional and as possibly incidentally shedding some small side lights on aetiology:

1. A case of which I have no available notes; a young man of about twenty-two years, otherwise healthy, who while engaged in rafting logs in a river full of drift ice, fell in the water and was exposed for some little time to the icy water.

Within two or three weeks an acute psoriasis occurred with symmetrical annular lesions covering a large part of his body, trunk, and extremities. He made a speedy recovery.

2. A young man about twenty-five, whose occupation was managing an elevator shipping grain, lime and brick, had persistent psoriasis on the hands and forearms. It might be mentioned here that his father, in his later years, had suffered much from pruritus and eczema. This case improved steadily under the use of X-rays with eugallol, but recurred at different times after a few months. Also two nephews suffered from psoriatic lesions.

3. A lady of forty-nine, who had large areas of diffuse psoriasis on the chest and trunk which had persisted for several years, and who had been under the care of dermatological specialists in this country and Europe, having for considerable time been in a hospital in Vienna under the care of Dr. Lassar, who had treated her with preparations of tar, chrysarobin and with the X-ray. I do not recollect any exciting cause or condition in the early stage, but in all these cases, the patients suffered from rheumatism more or less acutely, both in the beginning and in the later stage of the disease.

4. A woman in the hospital; aged forty-six—referred from the gynaecological department—patient had some eruption at the age

* Read before the 33d Annual Meeting of the American Dermatological Association, Philadelphia, June 3-5, 1909.

of sixteen years which developed more markedly at twenty, after the birth of her first child; persisted almost constantly and was more severe when working around a stove. It became worse a year ago following an abdominal operation. The lesions over the whole body were diffuse and in scattered patches, scaly and with slight bloody exudate when the scales came off. The lesions were more diffuse and less scaly on the face.

The patient's mother and brother have the same condition of the skin. The patient has a son, twenty-eight years old, who also has skin lesions of the same character.

5. A man, aged twenty-five, single, occupation farmer, had always been perfectly healthy until the present trouble began last July, when he had acute articular rheumatism which involved successively the ankles, knees, hips, arms, fingers, elbows, shoulders and spinal region.

The patient has been in bed since July, but the rheumatic pains ceased last January. At about the same time that the rheumatism began, the skin lesions appeared, first a small area on the foot and leg while taking bath treatment at St. Louis; the lesions spread and affected the legs, back, scalp and arms. In March the face became affected; the patient was helpless and his feet were very tender. This case was complicated by osteo-arthritis with severe constitutional disturbance, with a later tendency in the lesions to transformation into pityriasis rubra. There was also thickened seborrhœic crusts on the scalp. There was great rigidity of all the joints of the extremities and attempts at motion, beyond a very slight degree, caused pain; there was also œdema of the feet. The patient was helpless, unable to feed himself, to use his hands or to turn in bed, or draw up his feet but to a slight degree. Notwithstanding the appearance of dermatitis, the skin has cleared up considerably under the use of chrysarobin. He is also taking Fowler's solution with salicylates, and aspirin. His scalp has improved, there are no heart lesions discoverable, although at times the beat has been rapid. There is no evidence of endocarditis; blood count, reds, 4,300,000; whites, 9,100; haemoglobin, 95 per cent. The urine shows a few granular casts attributed to the effects of the salicylates. The patient has slowly improved, but the unusual osteo-arthritis complication, with later tendency to pityriasis rubra, constitutes a quite unusual form, and shows profound systemic conditions.

6. A girl, aged eleven, with dry papular, scaly lesions in various stages of development especially upon the neck, chest and back, arms,

CASES OF PSORIASIS.

forearms and hands. As there had been possible exposure to chicken pox it was thought she might have varicella, and a tentative diagnosis of that character was made. When she returned in another week these lesions had flattened, become scaly, and almost a typical example of symmetrical psoriasis guttata had developed. The lesions were very close together about the neck, forearms and hands. We then learned the patient had been taking Fowler's solution, sodium bromide, quinine and some other agents for epilepsy. She had been treated for this disease for at least two or three months. Then, under advice and with the idea of ascertaining whether these medicines caused the skin lesions, they were withheld for a few weeks, but a mild attack of epilepsy occurring again, the medicines were resumed. There were at no time typical bromide lesions. Under the use of chrysarobin ointment the patient's skin is now almost completely clear, while the internal medicine has been continued with the hope of keeping off the epileptic seizures which so far has been successful. Psoriasis has been more than ordinarily prevalent in this region during the past winter. Many cases were accompanied by tonsilitis.



SOCIETY TRANSACTIONS.

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, December 21, 1909.

DR. SAMUEL SHERWELL, President.

Hereditary Syphilis. Presented by DR. FORDYCE.

The patient was a baby about four months old, in whom the eruption had existed for about one month. When the case was first brought to the clinic, numerous bullous lesions situated on a dusky, slightly infiltrated base were present on the legs, thighs and about the buttocks. These subsequently became encrusted. Similar lesions had involved the face and were also encrusted, resembling impetigo contagiosa. The mother gave a marked Wassermann reaction.

The diagnosis was generally accepted.

Lupus Vulgaris (Extensive). Presented by DR. WINFIELD.

The patient was a girl nine years of age, from the Jewish Hospital of Brooklyn. She was born in Italy, and had been in America for five years. About two years ago she had some eruptive disease which the parents say the doctor called measles; immediately after the subsidence of the acute eruption a crusted lesion appeared on the right side of the neck. At first it was about the size of a five-cent piece, gradually increasing peripherally and healing in the centre. Within two or three months after the first appearance of the lesion, similar ones appeared on the arms, backs of the thighs, buttocks and legs; they all first appeared as small, crusted tubercles, which gradually increased in size, clearing in the centre, and leaving a slight atrophic scar. Dr. Winfield said when he first saw the case he was uncertain whether it was tuberculous or syphilitic, but had made a tentative diagnosis of tuberculosis from the appearance of the present lesion, the one on the neck, and the peculiar soft feel of the scar tissue. A Wassermann test had been made which was negative, but the von Pirquet was positive, consequently the case was presented as one of tuberculosis of the skin.

The father was a strong and robust laboring man; the mother was the picture of health; the patient was the fifth child of the family; the older children had always been well, and the patient herself had been healthy until she had the attack of so-called measles. Since the birth of the patient the mother had two miscarriages, both within an interval of one year.

DR. JACKSON said that it was a very remarkable case. If he had seen it without the history, he would have regarded it as a tubercular syphilide. It was uncommon for lupus to spread as had this disease in a serpiginous manner with a border made up of crusted tubercles or nodules, leaving a superficial scar, all the patches having a wavy outline. This was what was frequently seen in syphilis. On the other hand, in favor of tuberculosis of the skin, we had the great chronicity of the disease, its coming after measles and the positive reaction of von Pirquet. Dr. Jackson feared that we were too much inclined to lean on the laboratory for some of our diagnoses, and that we had not yet learned to read its language with exactness. He would like to see the case subjected to a more vigorous anti-syphilitic treatment before making a final diagnosis.

DR. G. H. FOX said that if the eruption were on an older subject he would say that it was as typical a syphilitic eruption as one might expect to see. Until the past year he had not realized that syphilis and lupus could look so much alike as to start a discussion in a dermatological society on the subject. But in the case of one patient, a negress, shown recently both here and at the Academy of Medicine, the opinions were about equally divided between syphilis and lupus. He had first made a diagnosis of syphilis himself, but on further study of the case had changed his opinion, and was now convinced that it was lupus. In the present case the lesions looked very much like a syphilitic eruption, but there was neither ulceration nor scarring. The process seemed to be very superficial.

DR. FORDYCE agreed with Dr. Fox that the case was not syphilis, but a superficial tuberculosis of the skin which resembled, in a most striking way, a tubercular syphilide. The spontaneous disappearance of certain lesions would not exclude lupus as he had made this observation in several cases.

DR. ROBINSON said that he had seen cases of tuberculosis cutis following measles, but not covering so large an area, of exactly similar character to some of the lesions seen on this patient. The lesions were much softer than one would expect in a tubercular syphilide. Outside of the fairly well-marked margins which were also found in syphilides, there was present in this case, some little infection beyond, as in tuberculous lesions of the lupus vulgaris variety. Then the superficial character mentioned by Dr. Fox spoke more for lupus than for syphilis. The granulation tissue was much more like tuberculosis than syphilis. He would call it a haematoogenous tuberculosis cutis.

DR. SCHWARTZ agreed with the diagnosis.

DR. KINGSBURY thought that it was a case of syphilis, notwithstanding the very suggestive history of lupus.

DR. HOWARD FOX said that it was very much like a case which his father had referred to, and which he himself had shown at the Dermatological Section of the Academy of Medicine last year. One or two of the members had suggested that there may have been two affections, and that lupus and syphilis might be combined, but the majority of men who had seen the case had made the diagnosis of lupus vulgaris. Dr. Winfield's case showed that the lesions could spread in a serpiginous manner over the skin and leave very little scarring.

DR. MORROW said that clinically the case was one of syphilis. It looked as much like a pustular syphilide as any eruption he had ever seen. The value of the Wassermann and von Pirquet tests could not be disputed, but neither of them was infallible—certainly the Wassermann test was not. It was possible that the attack of measles might have been the early eruption of syphilis. Before deciding upon the tuberculous character of the eruption, he would like very much to see the effect of thorough specific treatment for six weeks. The Wassermann and von Pirquet tests were valuable in confirming or negating a diagnosis. Notwithstanding the tests, he was inclined to consider the case specific.

DR. E. L. KEYES agreed that the eruption had the appearance of a syphilide, and concurred with Dr. Morrow's suggestion that the patient be given anti-specific treatment.

DR. SHERWELL said that he was just about to say the same thing as Dr. Morrow had said, about the advantage of instituting a pretty brisk anti-specific treatment. There were some points about the case, especially the character of the scars that did not look syphilitic, the ordinary pigmentation not being present and they were softer; the child being a brunette also made that point more exceptional. The duration and chronicity should also be considered. He was inclined, however, to consider it syphilitic and before making a positive diagnosis would like to see the case after moderately energetic treatment.

DR. WINFIELD said he would have the child placed on active anti-syphilitic treatment, examine the tissue microscopically and also have a guinea pig inoculated.

Lichen Planus Annularis. (Two cases). Presented by DR. KINGSBURY.

Both of the patients were native-born, middle-aged business men. They were large, well nourished, and apparently in excellent general health. The history was negative as to syphilis and rheumatism, and there was no suggestion of any neurotic element.

The first case had had the eruption present for about six months. It first appeared on the penis, and later the trunk and extremities became affected. There were now many annular lesions on the chest and back and very numerous small but typical papules on the trunk and extremities, particularly the upper, with grouping and confluence of lesions around the umbilicus. Most of the rings were of uniform size (about three-eighths of an inch in diameter), and clearly showed that they had been formed by the coalescence of a large number of minute papules.

The second case was of somewhat longer duration than the first, having had the eruption for over nine months. The trunk was practically free, but there were numerous lesions on the forearms, arms and thighs, and a few on the legs and hands. All of the papules were rather large and the annular lesions that were found on the forearms and thighs varied from three-eighths of an inch to one inch in diameter. On the inner surface of the left thigh near the knee there was an interesting figure-of-eight-shaped lesion. This was the result of the union of two of the rings with disappearance of their contiguous borders. These rings were each three-quarters of an inch in diameter, and both were formed by the peripheral extension of single papules.

DR. MORROW said he had no doubt of the diagnosis. At first glance he had thought it was pityriasis rosea, but a more careful examination corrected that impression. Both cases were very interesting.

DR. G. H. FOX said that patches of annular lichen planus were especially apt to occur upon the lower portion of the back. The centrum was dark and appeared depressed from the elevation of the circle. He had always spoken of this form of the eruption as the "lichen planus crater."

DR. FORDYCE said that the cases of annular lichen planus were exceedingly interesting. A number of years since he had shown a patient who was entirely

covered with annular lesions, with intense pigmentary changes. Later, the patient developed a temperature and died in the City Hospital. The autopsy showed a marked myocarditis with extensive vascular changes. The adrenals were cystic. It was possible that the involvement of the adrenal bodies might have had something to do with the marked pigmentary changes in the skin.

DR. ROBINSON inquired if the patient were a brunette. The pigmentation did not occur to the same extent in blondes. The darker the skin, the darker the lesions. He had shown a case of a colored woman who was very dark, and her lichen planus lesions were very much darker than the natural skin.

DR. SHERWELL said that he believed that in lichen cases generally there was a toxic condition, caused by defective elimination and that it usually manifested itself in a more or less rheumatic diathesis.

Tuberculide of the Face. Presented by DR. JACKSON.

The patient was a man, twenty-six years of age, a presser by trade. He stated that two years ago he had had an eruption similar to that from which he suffered at the time of presentation, on the other side of the face, and that it had disappeared after sea bathing in Florida.

When the patient was first seen on November 8, 1909, he had on the right side of the face an eruption of small pustules, apparently follicular. These dried down into greenish crusts which, on falling, left pitted scars from pinhead-size to one-quarter of an inch in diameter. The eruption then was made up of small pustules, greenish crusts, and pitted scars. His nose and the upper part of his left cheek showed scars of the same character as those just described. There were no subjective symptoms. On December 13th, Dr. Howard Fox made the von Pirquet test for tuberculosis, and obtained a positive reaction. After trying sulphur in the ordinary ointment without much improvement, he made rapid progress under salicylic acid and sulphur in goose grease.

DR. HOWARD FOX said that it was some sort of tuberculide, but he could not classify it.

DR. ROBINSON could not make a positive diagnosis, but thought that some of the lesions near the ear were necrotic in character. Some of the isolated lesions seemed to have been chronic in their course and had necrotic centres, like a tuberculide. He could not decide whether those on the face were necrotic acne or tuberculides without a longer study of the clinical course of the lesions.

DR. FORDYCE said he thought Dr. Jackson's diagnosis was as nearly accurate as it was possible to be, though Dr. Robinson's suggestion of acne varioliformis was a very good one. The latter complicated with acute inflammatory changes would explain the condition.

DR. JACKSON said that he had made the diagnosis of a tuberculide because he could not put the case anywhere else. It did not seem to him to present the characteristics of acne varioliformis. The case would be watched further, and, if possible, more thoroughly investigated and reported on. He would again call attention to the great efficiency of goose grease when a penetrating ointment base was wanted.

Exfoliating Dermatitis. Presented by DR. FORDYCE.

The woman gave a very interesting history. For fourteen years

she had had one or two attacks a year of a dermatitis which exfoliated, the eruption lasting about four weeks, at which time the skin peeled off. The development of the outbreak was usually preceded by chilly sensations and fever, the skin over the entire body becoming red and finally exfoliating, the exfoliation occurring in large sheets. The attacks came on usually in the winter season, and during the past eight weeks she had had two. When presented, the skin was entirely free from redness or exfoliation, and the case was only of interest in the light of the history she gave.

DR. JACKSON said that he had seen several cases of this kind of exfoliating erythema. In this connection he would report a very intense exfoliating dermatitis following the use of blue ointment. The patient was told by some of his friends that an itching he had about the pubes was due to crab lice and that blue ointment was good for it. So he bought a lot of the unguent and smeared his whole skin several times with it. This set up an intense dermatitis so that he had to go to bed. When he came to Dr. Jackson his whole skin was intensely red, and the palms of his hands were peeling off like a glove. It was a remarkable effect of a good ointment used in a wrong way.

DR. FORDYCE said such cases of exfoliating dermatitis belonged to a well-recognized type which recurred at regular intervals. The aetiology of these cases was obscure and probably depended upon some toxin. They might be allied to the forms of recurring erythema multiforme.

DR. SHERWELL recalled the fact that at one time Dr. Morrow had presented a very remarkable series of cases of exfoliating and desquamative dermatitis—both drug and idiopathic ones.

DR. MORROW agreed with Dr. Fordyce that it was a very well-marked type.

Melanotic Sarcoma. Presented by DR. G. H. FOX.

The patient, P. S., about a year and a half ago, first noticed a small black spot on the left leg; about six months later he noticed a small tumor, the size of a twenty-five-cent piece. This was removed by a surgeon. Later a number of black tubercles appeared, which had grown larger, until they were two-thirds of an inch in diameter. When first admitted to the hospital for treatment, on March 2, 1909, the left foot and ankle were nearly covered with a number of elevated papules or tubercles, some of them melanotic, others unpigmented. Some had begun to ulcerate. There was considerable inflammation and pain attending the condition, and the patient was hardly able to walk.

The treatment had consisted of injections of thirty minims of Coley's fluid, and forty X-ray exposures of ten minutes each, at a distance of eight inches. Also tonics and the local application of simple unguents. The injections of Coley's fluid were given every three weeks, reactions (chills and fever) following in each case. The X-ray treatment was given every third day. The Wassermann and Noguchi tests were negative.

Recently the melanotic tumors, which had slowly decreased in size as a result of the X-ray treatment, were first excised and acid nitrate of mercury applied.

DR. FOX said that a photograph, showing the condition of the patient's ankle before treatment presented a marked contrast with the present improved condition. Some of the members might remember having seen the case before.

DR. KINGSBURY and DR. SCHWARTZ congratulated DR. FOX on the success of his treatment. The improvement was very marked.

DR. WINFIELD said that he had hoped to present another case, a patient who had had a melanotic sarcoma of the foot and ankle for two years; he had given her X-ray treatment for about four months; she had improved very rapidly and all of the tumors but one had disappeared. Early in December she was confined to her bed with a severe pain in the abdomen and a swelling of the left inguinal glands; on examination, nodules were found in her liver, spleen and the superficial lymphatic glands were hardened and enlarged; the swelling of the left inguinal region was subsequently incised and a large quantity of pus evacuated.

This woman was undoubtedly suffering from metastases and it was a question if the X-ray was not altogether responsible for the sudden and generalized sarcomatosis.

DR. ROBINSON said that he had seen the case when it was shown before, and was very glad to see the result of the treatment. Melanotic sarcoma was one of the conditions in which he would be very much afraid to do any half-way work. If he had such a foot himself, he would have the leg amputated above the knee, and would not take any chances with X-ray or anything else. He considered the method of treatment followed in this case to be a dangerous one and not to be recommended on account of the great danger of causing a general metastasis. He had seen such results in similar cases following curettage and the application of caustics.

DR. FORDYCE said that it was too early yet to speak of results. In a year or two there would probably be metastases. A case of melanotic sarcoma of the foot which he had presented a year or two ago was excised very freely, but recurrence had already taken place in the scar tissue. He agreed with DR. ROBINSON that any interference should be radical.

DR. SHERWELL agreed with DR. ROBINSON. He thought DR. ROBINSON'S suggestion of amputation proper, though it seemed rather severe. He would advise either giving the man progressively increasing doses of arsenic, or would carry out DR. ROBINSON'S suggestion.

DR. G. H. FOX agreed with DR. FORDYCE that it was too early yet to make a positive prognosis. His own opinion of the case had changed somewhat, for when he first saw the patient he expected that a fatal result would occur very soon; he still looked for a fatal result, in spite of the manifest improvement in the case. The patient would not listen to the suggestion of amputation. He recalled the remarks he had made at the last meeting, in regard to X-ray treatment—that in spite of the harm done by its indiscriminate use, there were cases where it would accomplish a great deal. He had been surprised at the disappearance of some of the large tumors on this patient. He had hesitated very much before using the acid nitrate of mercury, for fear of active metastasis of the tumors, and their appearance all over the body. He was glad that he had not given the patient arsenic, for then it could have been claimed that the arsenic had caused the improvement. In nearly all cases of sarcoma where he had seen arsenic given in large doses and continued as long as the patient could take it, little or no improvement had resulted, and he did not think that its value in such cases had been demonstrated.

DR. FOX said that occasionally in cases of melanotic sarcoma with a single tumor, it could be destroyed without subsequent return or metastasis. He knew of two or three such cases.

DR. SHERWELL mentioned a case of melanotic sarcoma, a single tumor, which he removed and which had not recurred. The patient had remained apparently well for thirty years.

Pemphigus Foliaceus. Presented by DR. G. H. FOX.

The patient, S. M., was twenty-one years old, and an Austrian by birth. The present skin disease began three and a half years ago. During that time he had never been entirely free of the lesions. They began first on the body, spreading gradually over the face and extremities. The itching had never been intense. The health of the patient had remained fair. He had had no other skin disease, aside from the one for which he was presented. He had been treated in Baltimore, before admission to the Skin and Cancer Hospital, with injections of bacteria, but with no favorable results. For the past six weeks the patient had shown a decided improvement under tonics, citrate of potash, plain vaseline locally, nutritious diet, and exercise in the fresh air. When first admitted to the hospital, there was hardly a part of the body not covered by the lesions, which came out in crops. The bullæ, or vesicles, have never attained any great size, seldom larger than a small finger-nail; they ruptured readily, the serum rapidly drying, and giving the appearance of wet or greasy scales over the body. Although the patient's general health seemed fair, he was quite weak and anæmic in appearance. Owing to the lesions on the sole of the feet, he was unable to walk without great pain.

DR. WINFIELD remembered having seen the case when it was shown in Baltimore a year ago; the patient was then in a very much worse condition than when presented by Dr. Fox.

DR. SCHWARTZ inquired if any examinations had been made of the urine, especially in regard to the nitrogen partition. Definite changes had been found in the nitrogen-partition in cases of dermatitis herpetiformis and prurigo, but he had never had the opportunity to so examine a case of pemphigus, and he would like to know what the findings were in such cases.

DR. SHERWELL recalled a case he had treated years ago, very much like the one presented by Dr. Fox, but still more typical if possible. The patient was now a woman of forty, but was then only seven or eight years old.

DR. FOX said that the patient was very weak and mentally depressed when he came to the hospital. The treatment had been very simple, consisting mostly of good feeding. The urine was highly acid, but after he had taken the citrate of potash for some time it became slightly alkaline, and it was then that the improvement began. The bullæ on his feet had prevented his going out, but during the past month he had been able to get in the open air and exercise every day; and whereas, before, a large part of the body had been covered with bullæ, during the past month a large proportion of the skin looked normal. He hoped rather than expected that the improvement would continue, and that he would be able to send him back to his home in normal condition.

Pellagra. Presented by DR. HOWARD FOX.

The patient had been shown recently before the New York Academy of Medicine. As the members knew, Dr. Sherwell had previously reported two cases of this condition from Brooklyn, and Dr. Lavinder had lately seen a case in the Marine Hospital, but this was the first case to be shown before a Medical Society in New York. The patient was fifty-one years of age, a native of Georgia. He was in good health until two years ago, when he began to lose flesh and strength, and his appetite failed. In the spring of 1908 the first eruption was noted on the backs of his hands. It consisted of redness, followed by desquamation. During the following winter he seemed well. The dermatitis again appeared in April, 1909, showing more particularly on the radial side. Dr. B. Wolf saw him in the summer; the erythema then was more marked than at present, and the characteristic border at the proximal side of the eruption was more marked than now. He had had three or four attacks of these outbreaks, when the hands would become red and peel, after which they would remain of a brownish color for a while, and then again clear up comparatively. At no time had they been entirely clear. He had had the characteristic red tongue. During the summer he had a moderate amount of diarrhoea. He had a marked arterial sclerosis. His memory was poor and he was mentally depressed. There were no other nervous symptoms except the exaggerated reflexes and some rigidity of the legs. Both Dr. Babcock and Dr. Watson saw the patient and agreed that he had as typical a case of pellagra as could be shown at this time of the year.

DR. JACKSON said that he often wondered how much of an effect the discussion of pellagra in the newspapers would have upon the consumption of the various corn-breakfast foods now so much in use.

Dr. Fox replied that it was not corn that produced pellagra but "*spoiled*" corn.

DR. FORDYCE said that three years ago he had seen a case in the City Hospital which he diagnosed as pellagra. The patient was an Italian woman, suffering from mental depression, with a dermatitis on her hands and arms. The case was seen before much if any attention had been paid to pellagra in this country.

DR. KEYES said that he had seen a case in 1866, but had no remarks to make on the one just presented.

DR. SHERWELL said that he had seen some cases many years ago and referred the members to the *Journal of Cutaneous Diseases*, for February, 1883.

REPORTS ON CASES PRESENTED AT THE PREVIOUS MEETING.

DR. TRIMBLE reported that the case of dermatitis from quinine had cleared up.

DR. JACKSON said that he had seen the very extensive seborrhœa of the face but once since the last meeting. There was then no improvement.

DR. TRIMBLE reported that the case of dermatitis herpetiformis was still at the clinic and showed about the same condition.

CHICAGO DERMATOLOGICAL SOCIETY.

April 16, 1909.

DR. L. C. PARDEE in the Chair.

Toxic Erythema. Presented by DR. PARDEE.

The patient, a young woman, had small circinate lesions interspersed with a few bullæ upon the trunk. Subjectively there was much itching; the condition had recurred repeatedly.

The diagnosis of toxic erythema was concurred in.

Lichen Planus. Presented by DR. SIMPSON.

The patient was a mulatto boy, eight years old, from Dr. Zeisler's clinic. The mother stated that the eruption had been present for two or three months. Her attention was first directed to it by his severe scratching. The distribution was quite generalized. The sides and back of the neck, chest and flexor surfaces of the arms, the legs below the knees, and the inner surfaces of the thighs were especially involved. The face and hands were free and it was scanty on the back. The eruption presented streaks and lines, especially on the neck. On the flexor surfaces of the arms, there was a marked tendency toward an annular configuration. Below the knees were patches of a verrucous type. Characteristic, isolated, lichen planus papules were to be seen in many places. No evident aetiological factor—nervous shock, etc.—could be elicited.

The mother stated that when the eruption first developed there were often large blisters to be seen on the skin, evidently bullous lichen planus.

Lymphangiectodes. Presented by DR. McEWEN.

Dr. McEwen presented again the case of lymphangiectodes shown at the January meeting. The condition was markedly improved, partly as a result of the inflammatory complication at the beginning of the year and partly due to the action of the X-ray, of which fourteen exposures had been given. A few small vesicles still persisted on the anterior axillary fold and on the inner surface of the arm. It seemed probable that a further use of radiotherapy would remove all the lesions.

Pemphigus. Presented by DR. PUSEY.

This was a case of an old man with lesions in the genito-crural region, on the abdomen, and about the ears and neck. The right eye had been involved with resultant shrinking of the conjunctiva. A cicatricial alopecia was present, the exact nature of which had not been determined.

Lichen Ruber Moniliformis. Presented by DR. HYDE.

Dr. Hyde presented again the case of lichen ruber moniliformis, first exhibited to the Society in October 1905, and again in January, 1906. The condition of his skin had improved so that the chains of lesions were much less conspicuous.

ERNEST L. McEWEN, M. D.,

Reporter.

CHICAGO DERMATOLOGICAL SOCIETY.

May 21, 1909.

DR. O. H. FOERSTER in the Chair.

Tuberculosis Verrucosa Cutis. Presented by DR. SIMPSON.

The patient, who was from Dr. Zeisler's clinic, was a man twenty-five years of age; occupation, teamster. The dermal lesion had existed for two years.

There was present, over the ulnar surface of the right carpus, a lesion measuring three by four centimetres in diameter. It was sharply circumscribed, of dark-red color, and elevated above the adjacent skin about one-half a centimetre. The surface was irregular and in places showed a distinct warty growth. The patient stated that at one time it had been covered with a hard, warty crust and that he had regarded it as an enormous wart. This crust had been soaked off with a strong antiseptic solution some months before the patient came under observation.

A section from the lesion showed the histological structure of tuberculosis verrucosa cutis.

Leprosy. Presented by DR. HYDE.

Dr. Hyde presented for the second time a case of leprosy. The patient was first seen in December, 1904, and was shown at the Chicago Dermatological Society on December 22nd of the same year. He was a Russian and came to this country when fourteen years of age, from near Königsberg. He stated that the disease developed after his arrival.

At the time of his first demonstration to the Society, he presented a diffuse infiltration of the face with a few distinct nodules. On the trunk and extremities were large, flat tubercles, with areas of inflammation, and of pigmentation and depigmentation. There was some anaesthesia, though the loss of tactile sense was slight. Ulcers were present upon the feet and the ulnar nerves were enlarged. He was given the usual treatment, chaulmoogra oil, and subsequently greatly improved.

The infiltration of the face was now slight, the trunk was fairly free from tubercles except a group of small ones upon the right buttock, the extremities showed many areas of pigment alteration, the ulcers on

the feet had healed, the anaesthesia was only slightly marked, and the mucous membrane in the mouth was apparently free from active lesions. An element of quite recent development was the involvement of the eyes. The right eye showed marked cloudiness of the cornea with circum-corneal injection. The vision of this eye was very much reduced. The left eye showed a beginning haziness in the cornea. He was no longer able to take the chaulmoogra oil.

Lupus Erythematosus. Presented by DR. HYDE.

The patient was a woman, thirty-five years of age; the duration of the disease was ten years. The first lesions started on the left cheek in the form of sealing maeules, which gradually increased in size. Later, the forehead and region of the left ear became involved. No other portion of the body was affected. Her general health was fair; the urine was negative; there was no history of tuberculosis in the family; she had given birth to five children, one of them still-born.

When shown to the Society, typical lesions were present upon the bridge of the nose, the left side of the chin, and on the left cheek. Above the right eye and about the left cheek were coin-sized, atrophic, depigmented areas, surrounded by zones of hyperpigmentation. The lesions on the right cheek showed some activity. The case was obviously one of erythematous lupus, yet syphilis had been diagnosed by some who had seen the patient and had noted the history of one still-birth.

Scleroderma. Presented by DR. McEWEN.

The case was that of a woman forty-two years old. The patient had been married twenty-seven years, and had had ten children; all living and healthy; family history negative. Her general health when shown was poor, though she was robust and did not appear ill.

The disorder began about eighteen months ago, shortly after the birth of her last child, as a "swelling" on the back between the shoulders, accompanied by some itching and burning; later, other portions became affected similarly. The areas involved had been the seat of considerable irritation, which had been worse in the hot weather. When exhibited, the skin alteration consisted of large plaques of diffuse and boardy thickening of the skin with pigmentation. The parts affected were: (1) The back between the shoulders, extending down the spine to the waist line and over the scapulae, the whole area taking on the form of an immense "T"; (2) the upper and lateral surfaces and a portion of the lower surface of the left breast; (3) the external surface of each leg (hand-sized plaques); (4) a small band-like lesion on the right arm and similar bands crossing over each shoulder. The features of the parts affected were: (1) On the back, where the lesions began, were many telangiectases and several faintly atrophic areas; the color of the other parts of the back-lesions was reddish-brown; (2) the left nipple and

areola were perfectly soft, permitting one to feel a complete ring of boardy and infiltrated tissue at the boundary of the areola and the skin of the breast. There was no adenopathy present.

Lupus Vulgaris. Presented by DR. ORMSBY.

This patient was exhibited on account of his presenting two types of lesions seen in tuberculosis of the skin; the verrucous, and the ordinary nodular and scaling lesions of lupus vulgaris. He was an Austrian by birth and had lived in America for three years. He was twenty-six years of age and a laborer by occupation, and had suffered with the present disorder for two years. The family and past personal history revealed nothing of importance. The present trouble began two years previously in the foot following an injury inflicted by a rusty nail. One year after the involvement of the foot, lesions occurred in the groin and extended to the thigh. When shown, the right foot, at the inner and lower border, presented a large patch of verrucous lesions surrounded by an erythematous halo. Some secretion escaped from the surface of the patch. The lesions on the thigh and groin consisted of the usual brownish-red nodules of lupus vulgaris covered with scales. On pressure with the diascope, typical lupus nodules were evident. The glands in the neighborhood were much enlarged. Some scar tissue was present in the areas earliest involved.

ERNEST L. McEWEN, M. D.,
Reporter.

REVIEW
of
DERMATOLOGY AND SYPHILIS

Under the Charge of GEORGE M. MAC KEE, M.D.

GENERAL PATHOLOGY.

By CHARLES J. WHITE, M. D.

Experimental Studies on Keratohyalin, Eleidin and Parakeratosis.

BIZZOZERO, *Arch. f. Dermat. u. Syph.*, 1909, xcvii, No. 1, p. 55.

Keratohyalin was discovered by Aufhammer, Langerhans and Waldeyer and Eleidin by Ranvier, who considered these two substances identical. Blaschko, Darier and others agree with Ranvier, but others hold contrary opinions, and the subject has always proved a bone of contention. Opinions differ, also, as to the rôle which these two substances play in the production of the horny layer. For instance, it has been noted that where keratohyalin fails, one finds nuclei in the stratum corneum.

Bizzozero sets himself the task of elucidating these mooted points, and prepares his material by several methods, *i. e.* (1), simple inflammation produced by chemical substances; (2), bullous inflammation caused by freezing; and (3), inflammation and œdema as the result of trauma. The sections were frozen or imbedded in paraffin and stained by the Buzzi Congo red and haematoxylin-alum method, which stains keratohyalin and nuclei red and eleidin orange red.

From this material the author draws the following conclusions: (1). In the simple inflammations due to chemicals, intense cold or injury, eleidin is less affected than keratohyalin. (2). During the florid stage of the inflammation, keratohyalin and eleidin are both increased. (3). In the regeneration of the horny layer keratohyalin appears first, then eleidin, and finally the horny layer. (4). Colorable nuclei always appear in the stratum corneum when keratohyalin and eleidin are no longer produced. (5). When keratohyalin and nuclei in the horny layer appear in the same section the inflammation is merely a temporary one. (6). Cessation in the production of keratohyalin and eleidin cannot be brought about by emigration of leucocytes. (7). œdema alone cannot produce parakeratosis, but it can and probably does play some rôle therein.

The Experimental Production of Pigment in Vitiligo. R. STEIN, *Arch. f. Dermat. u. Syph.*, 1909, xevii, Nos. 2 and 3, p. 164.

Ehrmann used to say that vitiliginous areas could not be pigmented by external means, neither by light nor by vesicatories. Montgomery, however, records a partially successful result from the Finsen lamp, and Buschke claims a similar success with the Kromayer light, while Ehrmann has recently produced, with the uviol lamp, a few islands of pigment containing granules of haemosiderin.

Stein's experiments were conducted with a Kromayer lamp with exposures of three, ten and twenty minutes. He used, also, carbon dioxide for two minutes, and afterward excised these portions of skin and stained them by Unna's and by Pappenheim's methods.

RESULTS: (1) Vitiliginous areas can produce pigment after exposure to actinic and thermic forces. (2) Pigment appears as disseminated, irregularly bounded specks which have a certain period of incubation and then disappear. (3) Pigment is extra- and intra-cellular and morphologically similar to the normal pigment of the skin. (4) This pigment gives no iron reaction, is acid-fast, is dissolved by peroxide of hydrogen, stains green with polychrome blue, reduces osmic acid, and is blackened by silver. (5) This pigment gives the reactions of melanin.

Experimental Observations on the Influence of Radium on the Skin

GUYOT, *Arch. f. Dermat. u. Syph.*, 1909, xevii, Nos. 2 and 3, p. 211.

The author has written a long study. First an historical sketch of the work of the author's predecessors, *i. e.*, the effect of various rays, their latency of action, penetration, destructive powers, their action on various larvæ and organisms, and the analogy between the gamma rays of radium and the Roentgen rays.

The author then describes his personal investigations, using ten centigrammes of radium bromide with a capacity of five million R. E. Mice were used at first and afterward, for comparison, guinea pigs and rabbits. The exposures were usually of forty-eight hours, and the mice were killed at various periods from 3 to 330 days.

DEDUCTIONS: In the first two weeks a desquamation appears. In the third week occur a loss of epidermis and hair and the beginning of recalcitrant ulcers. Microscopically one notes in the first three to ten days a cell proliferation of all epithelial elements; and in ten to twenty days a progressive atrophy, even up to complete destruction of the upper layers of the skin. In the corium one finds cellular proliferation, especially about the follicles, and hyperplasia of connective tissue. On the other hand the hair papilla is not damaged, and elastic tissue, muscles and the hair follicle remain unaffected. Blood and lymph vessels are dilated, but exhibit no particular changes in their walls.

Radium acts as a physical and a chemical irritant. Different effects follow different periods of exposure. Reparative changes are slow. In the epidermis repair is produced by the proliferation of old cells; in the sebaceous glands by the differentiation of the new hair follicle; and in the hair by growth from the old hair bulb.

A Contribution on the Determination of the Pathogenesis of Keloid.

KRZYSZTALOWICZ, *Monatsh. f. prakt. Dermat.*, 1909, xl, p. 381.

The first part of the article is devoted to the views of men who believe in the existence of true and false keloids, and of those, per contra, who oppose this theory. Certainly from this recapitulation of the literature it is difficult to believe in the dual conception of keloid, either from chemical, aetiological or pathological grounds.

The second division of this contribution to this much-disputed subject deals with an example of typical, multiple keloids intermingled with multiform, acneiform lesions of the chest and back of a thirty-five-year-old workman; *i. e.*, a case of acne keloid. Microscopically there were no reasons for designating these tumors either true or false keloids. They contained proportionately more connective tissue cells than the ordinary fibroma. The fibres ran in various directions—centrally in veritable nests and peripherally parallel to the surface. Individually the cells were of the hypertrophic connective tissue type usually encountered in young connective tissue, and were more numerous peripherally. Vascular walls showed no infiltration except in the surrounding zones of the skin, where plasma and mast cells were conspicuous. These outlying vessels impressed upon one their active participation in the production of the keloidal masses.

As to the persistence or absence of the papillary body, the author found that the size of the subjacent tumor seemed to determine the question—the larger the underlying mass the less evident the papillæ. Elastic tissue was mostly wanting within the tumor structure, but present in the normal surrounding tissue, thus conforming to the accepted rule in keloids, and this loss of elastin the writer ascribes to pressure—the weaker elastic element succumbing to the more dominant fibrous tissue.

The study as a whole reveals clearly that the process starts as an inflammation around the vessels, and probably in the vessels around the hair follicles. This latter surmise is based upon original schematic drawings. These reveal an oblique bundle of fibres which represent probably the original follicle, and which constitute the oldest portion of the new growth.

In conclusion Krzysztalowicz states that he believes there are no tenable histological grounds for the terms true and false keloid. To him the two processes are one, and this change in the skin arises from some chronic inflammation, most commonly in the follicles and sebaceous glands.

BOOK REVIEW

Die Serodiagnose der Syphilis. Von DR. CARL BRUCK, Privatdozent und Oberartz der Dermatologischen Universitätsklinik in Breslau. Paper, pp. 166. Berlin: Verlag von Julius Springer, 1909.

Undoubtedly the most important contribution to the field of diagnosis in recent years has been the Wassermann reaction with its various modifications. In his earliest work on the test Wassermann associated himself with Neisser and Bruck, and much of the animal experimentation was performed in Batavia, by members of the Neisser expedition for the investigation of syphilis. Therefore, Bruck has been associated with the serum diagnosis of syphilis from its beginning, and has closely followed the various stages of its development. He is not only a laboratory worker, but is a dermatologist of ability; hence his opinion and conclusions as to the value of the reaction are most valuable.

The introductory chapter consists of an interesting review of the evolution of the Bordet-Gengou phenomenon with its final application to the diagnosis of syphilis. The various theories as to the nature of the reaction are reviewed in length, with the final conclusion that we are still ignorant as to why an infection with the spirochæta pallida should produce changes in the serum, which will give reactions with pure lipid substances. The different modifications of the original method are described. Bruck believes the use of an alcoholic extract of syphilitic livers as antigen gives as satisfactory results as watery extracts. He also thinks that the Stern modification, which employs the complement in the human serum, is more delicate than the original method. Noguchi's modification is merely mentioned. It is unfortunate that such an important method, based on a rational principle, should receive so little attention in a book of this character.

Under the heading, "Specificity of the Reaction," are given the observations of thirty-four different workers, covering 5028 cases in which no history nor evidence of syphilis could be obtained. Of this number only fifty-nine (or 1.1 per cent.) reacted positively. It is shown that patients with late and latent syphilis often are ignorant of infection, so that many of the above noted positive reactions were probably from patients with latent syphilis. Only three non-syphilitic diseases—framboesia, leprosy and scarlet fever—constantly give a high percentage of positive reactions.

The frequency of the reaction in the different stages of active syphilis is shown to be very high, and the value of the reaction in latent syphilis emphasized. The importance of the test in internal medicine, as well as in the various specialties, is demonstrated by the figures quoted from the literature. Much space is given to the influence of specific therapy upon the reaction. The opinion of all the observers on this point is that such influence is quite marked. The results of these observations lead Bruck to the following conclusions:

"First. In the primary stage, as soon as the diagnosis is positive, treatment should be started.

"Second. Energetic treatment early in the disease causes the symptoms to be lighter. If treatment produces both a disappearance of the symptoms and a negative reaction, the length of the period of relaxation from treatment should be controlled by the reaction.

"Third. The old artificial definition of a '*course*' of treatment must be abandoned, and the chronic intermittent treatment controlled by the serum test.

"Fourth. In general, treatment should be continued until the reaction becomes negative.

"Fifth. In patients with negative reactions the treatment should be discontinued only so long as the reaction remains negative, and if other evidences of the disease are not present."

The work ends with a very complete bibliography, covering the literature until the end of October, 1909. This volume is one of the most complete discussions of the subject which has yet appeared. The conclusions are not over-enthusiastic, but give rationally the value of the reaction to men in all fields of practical medicine.

H. F. S.

OBITUARY.

ERNEST WENDE, M. D., B. Sc.

Dr. Ernest Wende was born at Millgrove, Erie County, New York, July 23, 1853.

His early education was received in the schools of his native town, and the high school of Buffalo.

After graduating from the high school he taught school for some time. When he was about twenty-two years old he began the study of medicine at the medical department of the University of Buffalo.

His medical course was interrupted by an appointment to the United States Military Academy at West Point, but preferring the science of healing to that of war, he soon resigned and re-entered the University of Buffalo, receiving the degree of M. D. in 1878.

He practised general medicine for about six years at Alden, N. Y., in the meantime attending lectures at various universities.

The desire for a broader knowledge prompted him to enter the medical department of the University of Pennsylvania, from which he was graduated in 1884. He received the degree of B. Sc., in 1885, from the auxiliary department of the same university.

He spent the next year and a half in Europe studying histology, pathology and diseases of the skin. Upon his return home he began the practise of medicine in Buffalo.

His training in cutaneous diseases soon attracted the attention of the medical authorities of Buffalo who, in 1889, appointed him clinical professor of diseases of the skin in the medical department of that institution; he was also appointed professor of botany and microscopy at the Buffalo School of Pharmacy, in 1888; he retained these professorships until his death.

In 1891 Dr. Wende was appointed Health Officer of the City of Buffalo, and served in that capacity for ten years, from 1891 to 1901; in 1906 he was reappointed and served for the remainder of his life.

When Dr. Wende assumed office in 1891 the Buffalo Health Department had been badly administered and left in a demoralized condition, but owing to his strict integrity, executive ability and non-partisan affiliation, he soon had this branch of the city govern-

ment the best administered health department in the United States, and many of the improvements and regulations instituted by him were adopted by other cities.

Dr. Wende was elected a member of the American Dermatological Association in 1904. Shortly after his election his health began to fail, and he was never able to take any active part in its meetings.

He was a member of the American Medical Association, the American Public Health Association, the American Electro-Therapeutic Association, the Royal Microscopical Society, of London; he was also a member of the Medical Society of the State of New York, and served from time to time on some of its important committees, where his advice and counsel were greatly appreciated; he was President of the Medical Society of the County of Erie for the year 1898; he was Associate Editor of the *Buffalo Medical and Surgical Journal*.

In 1881 he married Miss Frances H. Cutler, of Omaha, Nebraska, who with a son and two daughters, survives him.

As a dermatologist Dr. Ernest Wende was a careful and concise diagnostician, and he applied his therapeutic knowledge in a most skillful and efficient manner.

It was not, however, as a dermatologist that Dr. Wende won his reputation, for his position as the health officer of one of America's foremost cities loomed so large that it overshadowed all his other activities.

He was a man of action, and when he knew a thing was right he had the courage of his convictions and accomplished his ends in spite of all opposition. He was a man of heroic courage and genial personality, a lovable friend and companion, and one of the most conscientious, faithful and competent of public officers, believing in the best in humanity and determined to do his part to make this belief a reality.

The members of the American Dermatological Association who knew him realize that the Association has sustained a great loss.

Dr. Ernest Wende died in Buffalo, after a lingering illness, February 11, 1910, in his fifty-seventh year.

J. M. W.

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A FURTHER CONTRIBUTION TO THE STUDY OF ELASTIC TISSUE IN EPIDERMOLYSIS BULLOSA.

By M. F. ENGMAN, M. D., and W. H. MOOK, M. D., St. Louis.

IN the study of hereditary or congenital diseases like epidermolysis bullosa, one would naturally seek for some suggestion as to its cause in the normal skin of the affected individual. The study of the skin not affected with the eruption in all skin diseases is of interest, as demonstrated by Gilchrist and others, and frequently proves of great pathological value.

We have had under our care four cases of epidermolysis bullosa, from which material was obtained for microscopic study. The results of the histopathological research of two of these cases were reported by us at the twenty-ninth annual meeting of this Association. In that communication we stated that we were surprised to find some striking results in the study of the normal as well as the diseased skin. In the study of those cases we could not confirm the observations of Elliott and Colombini, who described a certain granular-necrotic condition of the lowermost cells of the rete. Our findings in the cutis were similar to those described by other observers, with the exception of the elastic tissue elements. All whose writings we have examined, except Stanislawski, report the elastic tissue normal, while we found it absent or only sparsely distributed in the papillary and subpapillary portions of the cutis. In Stanislawski's report he states that he found the elastic tissue about the vessels absent, or the fibres thinner than usually seen. In our former report, we concluded that the absence of the elastic tissue was not due to the constant moisture in the skin of the patient, as was proved by the absence of degenerative elastic fibres and elacin. The oedema, if caused by injury to the tissues in the excision of the piece for microscopical examination, was too acute to cause such a complete disappearance of these fibres, and if such could have been the case, degenerative chemical affinities could have been demonstrated. Furthermore, elastic fibres are usually very resistant to

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œdema. Therefore, in our study of epidermolysis bullosa, we assumed that the absence of elastic tissue in the upper portion of the derma could explain the histological picture in the normal skin of these patients, and the clinical phenomena characteristic of that disease.

The elastic tissue is supposed to act as a support to the cutis, giving it tenacity and tone, and in this way having a controlling influence over the lymphatic and capillary circulation in the upper portion, besides acting in a similar capacity in its relation to the walls of the larger vessels. If the elastic tissue were absent in the upper portion of the cutis and deficient or deformed in the deeper portion, we would expect to find, from its known functions, the cutis to be bathed with moisture, from the loss of tone in the capillaries and from the deficiency of this tissue in the deeper portions of the cutis. In this condition the œdema would be expected to be slight, as there are probably sufficient elastic fibres in these cases to prevent marked congestion.

The tissues of the skin being thus constantly bathed with serum would undergo such histological changes as we find in the normal skin of these cases. When a trauma is received, the consequent reaction, not having the usual control exerted over it by the elastic tissue, would allow an excessive flow of serum into the tissues, which would seek the point of least resistance and would dissect or lift up the œdematosus epidermis into a bulla.

The elements or layers composing the roof and walls of these bullæ always depend upon the tissue found most weakened at the time of injury. Thus the roof may be composed of the whole or part of the epidermic layers.

We further stated, in our former report, that we did not wish positively to assert, without further observation, that epidermolysis bullosa was caused by the hereditary, congenital or acquired absence of elastic tissue in the papillary and subpapillary portions of the derma, but we felt that the findings reported could explain many of the features of this obscure affection.

Since the above report, two additional cases of epidermolysis bullosa have come under our observation, from which we have obtained sections of the skin for microscopical study.

CASE 1. C. A.; twenty-one years of age; diagnosis, epidermolysis bullosa. The patient states that no member of his family has ever suffered from this affection or from any skin disease; that he has been well all his life except for the present trouble, and that the formation of bullæ has existed since babyhood. When he pre-

sented himself for examination he had large and small bullæ over the palms and soles. He is a locomotive fireman and states that his palms almost always have several blebs present, though he has had similar lesions upon all portions of his body after rather severe trauma. There are no cicatrices or millium-like cysts. The nails are slightly dystrophic and show pitting to a slight degree. His case was not as well marked as others we have seen, and he has followed his occupation as fireman without great inconvenience. The patient is in splendid physical condition, the muscles firm and well developed.

CASE 2. C. L.; thirty-four years of age; German descent; diagnosis, epidermolysis bullosa. The patient applied to the St. Louis Skin and Cancer Hospital on August 28, 1908, for advice. The family history is as follows: His mother is living; he has one brother and two sisters; his mother, brother and one sister have the same trouble. The disease began in this patient immediately after birth, as did that of the others in his family so affected. The patient's general health is good, but he suffers a great deal with his hands and feet on account of his hereditary disease. When he appeared for treatment he had many large and small bullæ on both palms, and pigmented areas around the neckband and abdomen. A few cicatrices were seen on the hands, but there were no epidermic cysts. Friction with a towel produced abrasions wherever performed. The patient has remained in the hospital under observation.

For purposes of study, pieces of normal skin were excised, without anaesthesia, from the same location on one arm of both cases. For comparative study a piece of normal skin was excised from the arm of a girl in the hospital with eczema of the face; afterward, this girl developed dermatitis herpetiformis, due probably to chronic appendicitis, as she remained well since her operation. These sections of skin were immediately fixed in Zenker's fluid, two imbedded in paraffin and one in celloidin, and cut and stained by various methods. The principal stains used were Unna's polychrome methylene blue and acid orcein; Weigert's elastic tissue stain, counterstained with alum-carmine and picric acid, water blue and haematoxylin. Many of these sections were left in the elastic tissue stain from six to forty-eight hours in an incubator.

In our former study we prepared sections at the same time from other skin diseases, including numerous bullous affections, in the same manner and in the same solutions as a control of the value of our staining method.

We may cursorily state, at this point, that our findings in these two cases are virtually the same as those before reported, except that neither of the individuals, the subjects of this report, suffered with the disease in any marked degree. One of them has continued his occupation without much inconvenience, while the second one is now in the hospital acting as a porter, and, except on rare occasions, when his feet become much macerated, he is seldom troubled.

These cases were clinically less marked, and, as would be expected, we found in the study of the specimens a greater amount of elastic tissue than in those cases where the clinical manifestations were very marked. Case number one is even less marked than case number two, in all of its features. The epidermis in both cases is absolutely normal, with the possible exception of slight œdema in some places, which could have been caused by violence in the enucleation. Even in the sections from the bullæ no granular or necrotic epidermis is seen, as described by Elliott and Colombini. The lymph spaces in the cutis are probably dilated, but this, too, is a question, as it might have been due to violence. The principal and only point of study from our standpoint is that of the elastic tissue. To properly appreciate the findings in these cases one must have comparatively studied the elastic tissue of the normal integument in other diseases of the skin. We must admit that the gradations and deficiencies found in these two cases are slight, and we believe, from a careful comparative study of the sections, that there is sufficient evidence for us to assume that it is abnormal; abnormal in quantity, arrangement, character, and possibly slightly in chemical affinity. But as to the question of the abnormal chemical affinities, we have not determined it to our complete satisfaction.

In examining these sections for elastic tissue we find the following abnormalities which are most marked in certain areas, thereby differing from normal skin. The small fretwork line of elastic fibres, which mount from a short distance just under the papillæ to their tops, and decussate to form the well-known fretwork just under the epidermis, is not continuous, and is in many places absent. This fretwork, as we well know, sends up small fibrillae between the epidermic cells. When stained with Weigert's elastic tissue stain, this fine line is seen running in a zig-zag course just under the epidermis. When examined by a higher power, it is found to be composed of very fine elastic fibres which twist and turn like a vine, always

mounting upward toward the epidermis, and is joined by large thick bands here and there from below, from which the fine fibres have sprung. In both of our cases (being most marked in case 2), the fine fretwork is replaced by thick bands in the deeper portion of the derma. These bands, just as they reach the upper portion of the derma, at about the level of the interpapillary pegs, break up into small fibrils which do not decussate with others, but mount directly into the epidermis, thus leaving quite a space between the bands. The extremely fine fibres, which seem to ramify upward into the epidermis, are in many areas missing. In both cases the elastic tissue fibres are thicker, heavier, not so wavy or tortuous, and from their anatomical relationship cannot give to the cutis the tone that the normally arranged fibres undoubtedly afford. About the lymph spaces in the upper portion of the cutis the elastic fibres are decreased, and do not ramify with the surrounding fibres. It is a question whether the elastic tissue is deficient in these cases in and about the larger vessels, and this can only be determined by comparative study. In our two former cases, in which the clinical symptoms were quite marked, the elastic tissue was almost entirely absent in the upper derma and the bands in the same tissue, in the lower portions, were abnormal. The sections were striking in this regard when compared to the normal skin, or the diseased skin in other eruptive conditions. Although this is not so dramatic or convincing in the cases here reported, yet we feel, when the mildness of the clinical symptoms is taken into consideration, that the elastic tissue presents sufficient abnormality to cause the disease, if it is due to defective abnormality of this element of the skin. We have thoroughly and repeatedly examined the elastic tissue of bullous impetigo, pemphigus, bullous lichen planus, dermatitis herpetiformis, eczema, and normal skin excised from various portions of the body, and we feel that we can assuredly announce that we can find no condition in which the elastic tissue presents the same arrangement and quantity as it does in epidermolysis bullosa. Before closing, it must be borne in mind that the elastic tissue, instead of forming the anatomical fretwork at the upper portion of the derma, should directly mount into the epidermis; that such anatomical arrangement would deprive the skin of the mesh-like structure connecting the dermis and epidermis, thereby in every way lessening the strength and tone of the whole structure.

DESCRIPTION OF PLATES.

FIGURE 1.—Normal skin, showing distribution of the normal elastic tissue and its relation to the epidermis. Stained with Weigert's elastic tissue stain, alum-carmine and picric acid.

FIGURE 2.—Epidermolysis bullosa—normal skin of patient. (a) Showing the absence of elastic tissue in the papillary and upper portion of the corium. (b) The thick, wavy bands of elastic tissue in the deeper layers of the cutis. Stained with Weigert's elastic tissue stain, alum-carmine and picric acid.

DISCUSSION.

DR. D. W. MONTGOMERY said that in a case of lichen planus that had recently been under his observation there was also this absence of elastic tissue, and there was a line of cleavage between the papillary layer and the basal layer of the epidermis. Dr. H. Alderson, who worked out the case, looked upon this as a sign of weakened resistance. Dr. Montgomery said it seemed to him very probable, from our knowledge of the subject and from what he had seen of Dr. Alderson's work, that Dr. Engman had struck the correct anatomical reason of epidermolysis bullosa, namely, that the elastic tissue was a very important factor in binding the epithelial layers down to the underlying structures.

DR. CHARLES J. WHITE said that Dr. Engman's observation regarding the absence of elastic tissue in the derma was one of great interest. It would be interesting to learn if there was an absence of elastic fibres in the apparently normal skin of patients who were subject to epidermolysis bullosa. There were very few diseases of the skin in which the elastic tissue was not greatly modified in the affected areas, but in the unaffected parts of the body the elastic tissue was normal.

DR. MONTGOMERY, in reply to Dr. White, said that in lichen planus, the elastic tissue was absent in apparently unaffected regions of the body.

DR. ENGMAN, replying to Dr. Montgomery, said that lichen planus was not a skin disease. The sections described in their own cases were taken from the normal skin at points where there was no evidence of disease. When the elastic tissue became weakened, decreased, or absent, then the derma did not possess its usual tone, and any slight injury would allow the serum to exude and elevate the epidermis, thus determining the depth of the bullæ. This did not seem to agree with the findings of Drs. Elliott and Colombini, who described a certain granular-necrotic condition of the lowermost cells of the rete. In their own work, for control purposes, Dr. Engman and Dr. Mook thoroughly and repeatedly examined the elastic tissue in cases of bullous impetigo, pemphigus, bullous lichen planus, dermatitis herpetiformis, as well as sections of the normal skin excised from various portions of the body, and they felt competent to announce that they found no condition in which the elastic tissue presented the same arrangement and quantity as it did in epidermolysis bullosa.

PLATE XXXV.—To Illustrate Article by DR. M. F. ENGMAN and DR.
W. H. MOOK.

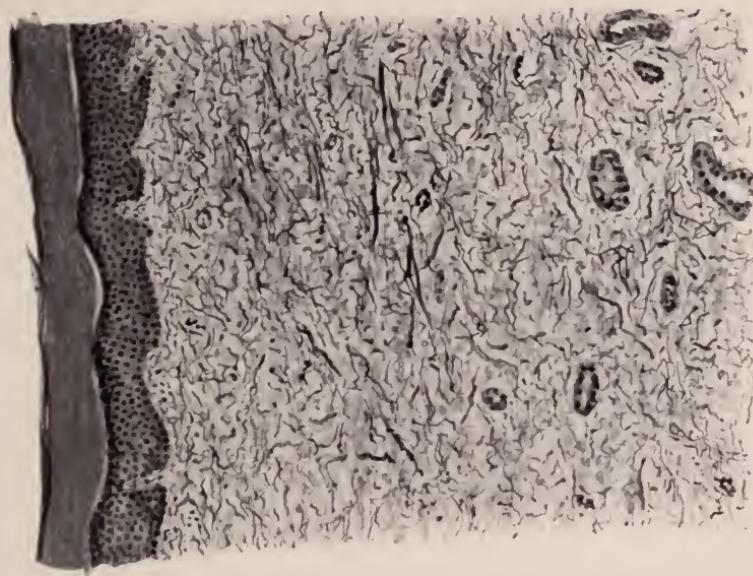


Fig. 1.

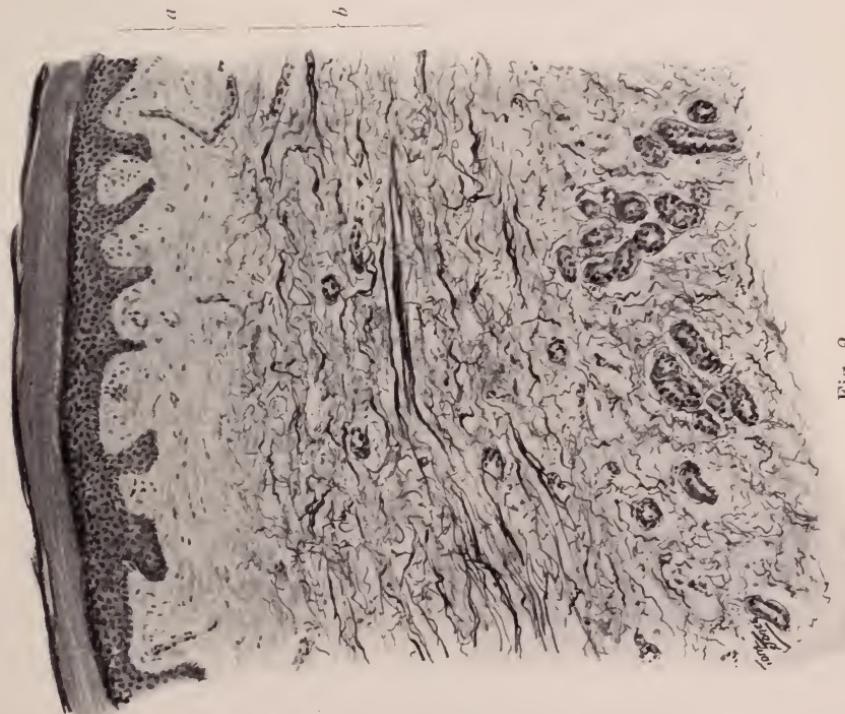


Fig. 2.

MERALGIA PARÆSTHETICA.

By DR. SAMUEL SHERWELL, Brooklyn.

THIS short history of a case of the above trouble as occurring in my own person is only given to add one more to the very meager list of those recorded, less than fifty in all, I believe, and also to confirm Dr. J. C. White's writings on the subject, of which more will be said later. Within the past month one other case has come under my notice in a man of about my own age, which is typical and identical with my own as to symptoms, locality, etc.

Dr. James C. White, in a paper read at the twenty-ninth annual meeting of this Association, and published in **THE JOURNAL**, April, 1906, has given an excellent and full description of the affection in question, and a synopsis of the literature of the subject; of those first making mention and calling attention thereto and their general ideas of the aetiology and pathology of the disease.

To the Doctor's paper and the text-books which speak of the subject I shall refer you for detail rather than weary you with useless repetition; but I shall, without apology and with many thanks, use some parts of the Doctor's description of symptoms, as they are so identical and classical—to be brief:

For about the last ten years of my life, in the outer and lower two-thirds of my left thigh, after strenuous and long-continued exertion, as walking, riding and cycling, there has occurred, in the region supplied by the external femoral cutaneous nerve, the following symptoms: This region becomes the seat of a variety of perverted sensations such as tingling, tenseness, or still more acute superficial tearing and darting pain, with numbing of sensation from the femoral exit of the nerve to a point just above the patella; this may be only a dull ache, but is usually more acute. It may begin as a glowing sensation also; the rest of the limb with its cutaneous envelope appears to be entirely normal; these symptoms soon subside on resting—sitting or, better, lying down, but can be brought on readily by resumption of exertion. The painful sensations are

Read before the 33d Annual Meeting of the American Dermatological Association, Philadelphia, June 3-5, 1909.

like nothing so much as those of zoster (I suffered once from zoster of the musculo-spiral nerve and its terminals), and in my belief they are caused by the same mechanical means, viz., pressure on the nerve in its continuity, though probably not from the exudation pressure which occurs in zoster. Sensory disturbance seems to be pretty much all. I think I may call myself a healthy man of over sixty; so far as I know I am physically sound and take pleasure in protracted and, it may well be, extreme exercise of all kinds; curiously enough, too, the affection seems to be diminishing in intensity; for the last two years it has certainly not been so acute or prolonged. My habits of exercise I have not changed in the least. I frequently walk five miles or even nearly double that distance, rather than use cars.

Doubtless this peculiar trouble is more common than the records would seem to show; it might be, and doubtless is, often taken for muscular rheumatism or ordinary neuralgia. It is of a very different nature, I think, though I believe, as I shall state further on, that the rheumatic condition favors intensity, but there is no doubt in my mind of its being an absolute entity as to pathology.

Dr. White seems to have found in his case some objective phenomena; I cannot say that I have. There seems to be no congestion, anaemia, hypertrophy nor atrophy, etc.; as before said, perverted sensation is all.

My conclusions as to the aetiology of this condition are, in brief, these: That the condition comes from a constriction, or pinching, as it were, of the nerve as it passes through the tough fasciae of a muscular individual; that that and the consequent irritation resulting therefrom, and possibly a transient exudation at the site of the constriction as well, between the sheath and nerve substance proper, causes all the symptoms; a temporary non-essential zoster as it were.

The only aiding cause on which I lay any weight is, as I have said before, a rheumatic tendency; a condition that may aggravate, as can be rationally concluded. I have that tendency in some slight degree, and my condition is worse when rheumatism is present.

I have no theory or recommendation for treatment, though it is an annoying trouble; rest and perhaps slight massage produces rapid, though unfortunately only temporary relief—not a cure.

DISCUSSION.

DR. WILLIAM A. PUSEY recalled the statement made in Dr. White's original paper, that this disease was a good deal commoner than one would suppose from the attention it had received. Dr. White did a distinct service in calling attention to the condition. Dr. Pusey said he had seen two of these cases within the past eighteen months, and he had also had his attention called to similar cases previously. The condition, in its symptoms, was not to be compared so much to zoster as it was to a numbness of the nerve due to pressure. He looked upon it as a purely mechanical condition. In one of his cases, the patient was a man of fifty-five who was unusually athletic, while the other was a phlegmatic, heavy man who was somewhat younger than the first, and who did not take excessive exercise.

DR. JAMES C. WHITE said the case described by Dr. Sherwell was a typical one of this affection. The manifestations were distinctly cutaneous in character, for which the patient usually sought relief from the dermatologist. In his own case, the speaker said, he had tried a great many remedies without success, and since then the patient had taken X-ray treatment, which had given him very decided relief. It had not cured the disease, but the intervals between the attacks were much longer, and the symptoms were not nearly so severe as they were before.

DR. E. B. BRONSON suggested that thiosinamine or fibrolysin might be tried.

DR. GEORGE PERNET said that while he was not familiar with this complaint, he would be inclined to try the effect of a mustard leaf applied over the lumbar spine, or, when the symptoms were in the arm, over the cervical vertebræ.

DR. WHITE said that in his case the application of heat or cold, or friction and massage produced no effect whatever.

DR. SHERWELL said he agreed with Dr. Pusey that the sensations were the result of nerve pressure, and he had merely compared the pain to that of zoster. So far as he knew, it was not associated with any organic complaint, nor were there any evidences of prostatic enlargement in the case he had reported. His own idea of the symptoms was that they were the result of a pinching of the nerve in its sheath, perhaps due to some adhesions.

NOTES ON SYPHILIS.

By JOSEPH GRINDON, M. D., St. Louis.

THE TRUE VESICULAR LESION IN HEREDITARY SYPHILIS.

HUMAN knowledge is often compared to a great edifice, parts of which have been completed, while new wings and loftier stories are constantly being added. But just as older parts need occasional repairs, so it happens that facts once recorded are again half forgotten and require restatement and perhaps revision. Writers tend to repeat each other's omissions, until the existence of certain things, after being first doubted and then denied, is simply ignored by the majority. Something like this has befallen the miliary vesicular eruption of hereditary syphilis. Failing to find any reference to it in the majority of authorities consulted, it seemed worth while to call attention to it again. Thus, among treatises, most of them especially devoted to syphilis, but making no mention of the vesicular manifestation of hereditary lues, we find those of Swediaur (1788), Melchior Robert (1851), Bassereau (1852), Bumstead (1864), and, more recently, Diday (*Syphilis des Nouveaux Nés*) and his American editor, Sturgis; that of the latter again in Morrow's System (*Hereditary Syphilis*), Neisser (in *Ziemssen's Handbuch*), Hutchinson (in *Twentieth Century Practice*), Kaposi and his editors, Besnier and Doyon, McCall Anderson, Jamieson, Jacobi (*Hereditary Syphilis, American Text-Book*), Mracek, G. H. Fox (*Skin Diseases of Children*), Keyes, Otis, Walker, Gottheil, and Hyde and Montgomery (*Manual of Syphilis and Venereal Diseases*).

Adamson (*Skin Affections in Childhood*) alludes indeed to the vesicular eruption of hereditary syphilis, but does not describe it. Here and there a writer mentions the condition, generally to dismiss it in a line or two as a mere variant of a papular eruption, or as consisting of a few adventitious lesions occurring along with some more familiar manifestation. So Stelwagon, for example, mentions that vesicles may occur with the bullous syphilitide. Most of those writers who mention the condition—such as R. W. Taylor, Crocker

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and Carpenter—say it is rare, in which I fully concur. Pusey, however, speaking of hereditary syphilis, says, “Vesicular syphilides are not uncommon.”

Again, there seems to be some difference of opinion as to chronology. Thus, R. W. Taylor says, “This rare form of eruption occurs among the early symptoms in severe cases of hereditary syphilis”; while Crocker¹ says, “They are scarcely ever the first form of eruption.” It would seem, however, that he is describing the bullous syphilide at its earliest stages, for in the case he cites the lesions had developed into bullæ by the following week.

Rollet² refers to two cases of hereditary vesicular syphilide, consisting of crowded small vesicles resembling those of eczema, which in twenty-four hours became confluent and exposed a raw surface. They extended over the neck, upper part of the chest, nape, lower part of the abdomen, inguinal and crural regions, the genitals and buttocks. Rollet mentions some other cases in which vesicles were grouped on the palms and sometimes on the forehead.

R. W. Taylor³ says, “This rare form is never general, but is usually associated with a pustular or bullous eruption, and appears in groups of vesicles, closely and irregularly packed together, upon the chin and about the mouth, upon the forearms, the nates, the hypogastrium or the thighs.” The smallest lesions, according to Taylor, are two lines 1-6 of an inch in diameter. He adds, “Unlike eczema, the distinct vesicles show a tendency to remain isolated and to involve deeper portions of the skin, and rarely coalesce to form superficial weeping patches.” This account differs notably from Rollet’s and describes rather a small bullous than a vesicular eruption. Hayden and Carpenter give descriptions closely following Taylor’s.

I believe, on the other hand, that there exists a rare hereditary syphilide which is truly vesicular, namely that of Rollet. The vesicles are not mere accompaniments of pustules or bullæ, nor do they consist of papules with apical vesiculation, but they exist independently as vesicles, and as such constitute the small miliary vesicular heredo-syphilide.

I cite two observations:

The first, a two-weeks’ old male infant, was seen in consultation. There was a clear history of recent syphilis in both parents. The

¹ *Diseases of the Skin*, 3d ed., p. 833.

² *Maladies Vénériennes*, 1865, p. 976.

³ *Venereal Diseases*, 1895, p. 934.

eruption had appeared three or four days after birth. The infant, marasmic in the extreme, with a clay-colored wrinkled face, unable to nurse on account of the ulcerated condition of the lips and mouth and occlusion of the nostrils, with an unceasing, weak, raucous cry, presented an extreme picture of malignant syphilis. The abdomen, back, thighs, and arms were covered with small pinhead-sized, miliary vesicles everywhere coherent. On the buttocks and about the genital region the epidermis had rubbed off, denuding a raw, discharging and bleeding surface, greatly adding to the torment of the miserable little creature. On the scalp, face, neck, chest, forearms, palms, legs and soles the lesions were not quite so thick-set, and showed some tendency to grouping. The child died the next day.

The second case presented the same type of lesion, but lay at the opposite extreme in point of severity. The child was born at term and seemed fairly well nourished. The parents had been married eleven years, but there had been no previous pregnancy. Both seemed to be in the best of health. The mother gave a negative history, but the father admitted infection before marriage, claiming to have been thoroughly treated and to have had no symptoms since. The weight of the child at birth was nine pounds, but this was reduced one and a fourth pounds in the first ten days. There was "snuffles" from the first, soon followed by diarrhoea. On the fourth day a few miliary (one-half pin head size) areolated vesicles were noticed on the face. I saw the patient first on the eleventh day. The outline of the liver and spleen was normal. There had been eight fluid dejections in the preceding twenty-four hours. There were miliary vesicles, for the most part grouped, over the face, scalp and neck, a group of three or four being near each outer canthus. The lesions were everywhere symmetrical. They were closely set over the shoulders and supraclavicular regions, on an infiltrated base, closely simulating miliaria. They were less abundant on the anterior aspects of the arms, still less on the forearms. A patch of four or five, closely set, was on each palm, over the theno-volar crease, near the radial border. Lesions were scattered over the abdomen and lower half of the back; a few on the thighs, none below the knees. At the anus there was a flat, moist lesion which antedated the diarrhoea. The patient was put on grey powder.

Two days later the lesions had begun to disappear and the diarrhoea was improving, but the "snuffles" was no better. By the time the patient had completed her third week, however, all symp-

toms had vanished. Treatment was continued, there was no return of symptoms, and now, nine months later, the patient is apparently in perfect health.

SYPHILIS ACQUISITA TARDA.

An Untreated Case in Which the First Cutaneous Manifestations Appeared Twenty Years After the Chancre.

We are apt to reject, as false or erroneous, statements at variance with our long-established beliefs. It may well be asked whether this accords with the true scientific spirit. Such alleged facts should rather be heard and recorded, with the knowledge that science will in the future continue to revise its opinions, as it has so often done in the past. I confess that had the narrative which forms the subject of this note been communicated to me by a layman, I would have attached little weight to it. Under the circumstances, however, I could not but give it credence.

A well-informed and highly intelligent physician in whose integrity I place absolute confidence, consulted me for an indolent lesion which had existed some two weeks on his face. Its characters were not well marked, but I thought it more like a syphilitic tubercle than anything else. He stated, however, that he had not had lues. Nevertheless, further investigation revealed an indubitable patch of the tubercular syphilide upon the arm. My diagnosis, positively stated, was received with incredulity, but elicited the following history:

Twenty years before, he had confined a colored woman who presented numerous condylomata about the vulva and anus, as well as other unmistakable signs of an active syphilis. Large green flies were buzzing about, settling upon the condylomata and then transferring their attentions to the accoucheur. Just as the head was coming over the perineum, and while both of the doctor's hands were engaged (it was before the day of rubber gloves) one of these flies alighted on the skin over the first phalanx of his right index finger. He felt a stinging sensation at the moment, and the next day the finger became swollen and painful. Some three weeks later a sore appeared which enlarged, became indurated, and did not heal for a month. The doctor consulted a brother practitioner, one of the ablest in the city, who diagnosed a chancre, and advised constitutional treatment. The patient wisely decided to wait for the secondaries. In his own language, "I waited and watched for forty-five days, for

ninety days, for six months. I have watched ever since, and until the appearanc of these lesions, in the last few weeks, there has been absolutely nothing." Specific treatment was followed by rapid disappearance of the lesions, increase in weight, and marked improvement in the patient's general appearance.

PULMONARY SYPHILIS AT AN UNUSUAL SITE.

A previously healthy, strong man of twenty-six, acquired a penile chancre in September of 1906, which was soon followed by the usual early secondaries. Treatment was thereupon instituted and continued with fair regularity, except for frequent sprees lasting at times several days. In spite of these, the patient did well, except for occasional throat and mouth lesions, until April of 1908. At that time, after being exposed to cold and damp weather, he developed a bronchitis. For some time he refused to take proper care of himself, but finally, becoming alarmed, he entered a private hospital. The sonorous and sibilant râles, which had existed over both lungs, soon cleared up, except at the left infraclavicular space, where they were replaced by moist râles. There was dullness on percussion over this area. The patient had irregular fever, highest in the afternoon, and night sweats. The physical signs of a cavity appeared, there were cough, some muco-purulent expectoration and hæmoptysis. An expert general practitioner made a diagnosis of advanced pulmonary tuberculosis, and advised an immediate change of climate. The patient had lost over twenty-five pounds. Meanwhile, a series of sputum examinations, made by the pathologist of Washington University, Dr. Tiedemann, continued to yield negative results. The patient did not leave the city, but under more regular and reinforced specific measures he began to improve gradually, his fever, cough, and expectoration disappearing. There was no return of the hæmoptysis. He increased in weight and strength, and by the following September all symptoms and physical signs of his ailment had disappeared and he returned to apparent complete health, a condition which still persists.

It seems fairly reasonable to accept this case as one of gumma of the lung. It is peculiar in that pulmonary syphilis is said to invade the lower part of the lung, whereas this case located itself in the re-gion usually invaded by tuberculosis.

SOCIETY TRANSACTIONS.

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, January 25, 1910.

DR. SAMUEL SHERWELL, President.

Epithelioma Nasi. Presented by DR. KINGSBURY.

This case was presented for therapeutic suggestions. The patient was a married woman, forty years of age and had had the lesions on the nose for the past twelve years. It was said to have started from a mole. The greater part of the right nostril had been destroyed but there was a good scar on the bridge of the nose where, about two years ago, an application of carbonic acid snow had been made to an ulcerated area. When presented the only active lesion was an ulceration at the tip of the nose. This was about three-eighths of an inch in diameter and had a rather firm, slightly elevated, waxy border.

Dr. Kingsbury said that when he first saw the woman four years previously, it had occurred to him that there might be an underlying specific element and the patient was kept under appropriate treatment for over two months, but without appreciable change. He then curetted and cauterized the lesion and later used the carbonic acid snow with satisfactory results. Shortly after this she was lost sight of and was not seen again until recently, when she presented herself for inspection with ulceration of several months' duration at the end of her nose.

DR. BRONSON thought that the original lesion was probably syphilitic, upon which an epithelioma had developed later. The grouped scars suggested syphilis. There was no question of its being epithelioma now.

DR. MORROW said that if it were not for the chronicity of the lesion he would consider the cause specific in nature, but the prolonged duration without more destructive changes would probably eliminate that suspicion.

Dr. Morrow said there was a great tendency for epithelioma to develop upon syphilitic lesions in that region. It was especially marked in lesions of the tongue and buccal cavity, more so than in any other cavity of the body.

DR. FORDYCE said the present lesion was undoubtedly epithelioma. Dr. Bronson's view that it was an epithelioma developing from a syphilitic lesion was probably correct.

DR. JACKSON said it seemed to him that the case would be best treated by freezing with carbonic acid snow. In a similar case, an old man with great destruction of the nose by epithelioma, he had had very satisfactory results by freezing the exposed and diseased mucous membrane of the nose.

DR. SHERWELL said that naturally he would advocate his own method of treatment by the curette and acid nitrate of mercury. He instanced a case in which he had operated on an old man, eighty-five years of age, with very serious lesions of epithelioma in just about the same locality—on the nose, face, etc., of a slowly progressive character, and the man died twelve years after at the age of ninety-seven; no recurrence had developed.

Lupus Vulgaris. Presented by DR KINGSBURY.

This case was formerly of considerable interest on account of the obscurity of the diagnosis. It had been presented for Dr. Kingsbury before this Society by Dr. Bulkley about eight years ago. At that time there was a large granulomatous mass at the left angle of the mouth and there had been considerable diversity of opinion regarding the nature of the growth. Subsequently, when it decreased in size and flattened down, the characteristic nodules of lupus vulgaris were found. The case had been persistently and, at times, energetically treated, but the results had been very unsatisfactory.

Occasionally, it was thought, by other physicians, that there was some improvement in the condition, notwithstanding the fact that the diseased area had been steadily increasing.

When presented, the eruption covered the chin, lips and all of both cheeks, with some lesions on the upper eyelids and a patch in front of the left ear. The cartilage of the nose was destroyed and the oral orifice greatly contracted. The boy who was, at the time of presentation, fourteen years of age, was thin and rather undersized, but his general health had been fairly good. He was born in this country as were both of his parents and all of his grandparents. The patient's father was suffering from advanced pulmonary tuberculosis, but the other members of the family were said to be in good health.

DR. SHERWELL said that he had seldom seen such a case in America.

DR. JACKSON said that he believed that freezing by carbonic acid snow would cure the condition in a very short time. He had seen several such cases in his clinic that did very well indeed under such treatment.

Case for Diagnosis. Presented by DR. HOWARD FOX.

The case had been presented to the Society by Dr. George Henry Fox three months previously as a case of possible erythematous lupus of the nodular form. At that time several of the members disagreed with the diagnosis and thought the case to be one of syphilis. The patient had had "mixed treatment" for three months, and showed some slight improvement. There were now no scaly patches, such as were seen the last time she was presented.

DR. KINGSBURY said that as the case now appeared he would not care to make a positive diagnosis. He did not think it was syphilis, however, and it certainly did not correspond to the nodular type of erythematous lupus as described by Crocker.

DR. JACKSON felt that the diagnosis was doubtful, though he did not think it was syphilis. Had it been syphilis the nodules would have ulcerated by this time. The nodular form of lupus erythematosus, as he understood it, was never so extensive as in this case. He could not make a diagnosis.

DR. FORDYCE said that several possible diagnoses had occurred to him. A positive diagnosis could not be made without careful pathological examination, but the color of the pigmentation suggested the possibility of lepra.

DR. BRONSON said that when the case was presented before it did not seem to him to conform to any form of lupus erythematosus he had ever seen, and he was still of the opinion that the disease was too deep-seated for lupus erythematosus, which he believed always involved the epidermis and this did not. Though at that time he was inclined to think the case one of syphilis, the permanence of the lesions would seem to contradict that; if it had been syphilis the case would by this time have shown more change with some destructive degeneration. Dr. Fordyce's suggestion of lepra would seem to him well worth considering.

DR. JOHNSTON thought that a discussion of the case was idle until a nodule had been removed and examined. Whatever the condition may have seemed to have been previously, the present appearance of the face would suggest lepra very strongly—the pigmentation, the involution of the lesions without ulceration, the distribution, etc. The nodules on the ear, also, would tend to that diagnosis.

DR. MORROW said that the diagnosis of lepra had also occurred to him, but he had not detected any enlargement of the ulnar nerve. That, however, would not exclude lepra, and the case might be of that nature.

DR. BERK inquired whether a tuberculin test had been made, and if so, whether there was any cutaneous or subcutaneous reaction.

DR. FOX replied that a von Pirquet test had been made, which was followed by a slight reaction.

DR. PIFFARD said that judging from the appearance, irrespective of the history, he would say that it was a tubercular eruption but not a tuberculosis. In other words, it seemed to be a tubercular acne, a subcutaneous, slow, almost phlegmonous type, which only suppurred after a long time. It did not seem to him to be syphilitic, leprous, or tuberculous, but certainly it was tubercular.

DR. TRIMBLE said that when Dr. Fox first presented the case, he was inclined to think it one of lupus erythematosus of the type spoken of by Crocker as nodular. This opinion was formed on account of one of the patches on the forehead having rather large follicular openings and some scales. When the patient first presented herself at the clinic, lepra was thought of, but not given much consideration, though now it seemed to be a very good suggestion. He was much interested in the case and looked forward with interest to the pathologist's report.

DR. SHERWELL said that when the case was exhibited before he thought it a frank syphilitide. The idea of lepra had not occurred to him, but since Dr. Johnston's remarks the extraordinary resemblance to lepra lesions had struck him. The history of the case and a histological examination would in this case be of great interest.

DR. HOWARD FOX said he was pleased that no one at this time, as at the previous meeting, thought the case to be syphilis. The possibility of its being lepra had been discussed in the clinic. There was, however, no anaesthesia, and no enlargement of the ulnar nerve. The patient, furthermore, came from Switzerland, a country in which there were very few lepers. It was hoped that the histological report would be ready for the next meeting.

Tumor of the Shoulder (for Diagnosis). Presented by DR. HOWARD FOX.

This case had been presented by DR. GEORGE HENRY FOX at the

last meeting of the society. During the past month the growth had enlarged till it was three times the former size. The iodide eruption had largely disappeared. The histological examination would be reported at the next meeting.

DR. FORDYCE said he thought that the lesion was a malignant growth, probably originating from a mole.

DR. JOHNSTON thought that it was a melano-sarcoma, and suggested to DR. FOX that when put in the hands of the surgeon the lymphatics be dissected as far as their regional nodes.

DR. FOX said that the case would be referred to the surgeon as soon as the pathological report was received.

Hereditary Syphilis. Presented by DR. HOWARD FOX.

The patient was a French Canadian woman, thirty-four years old; a seamstress. The case presented very severe ravages of hereditary syphilis, the upper lip, nose and nasal septum having disappeared. The case had been reported in THE JOURNAL for January, 1908 on page 39. DR. FOX had consulted with numerous dentists regarding an attempt to relieve the unsightly deformity by means of an artificial nose and upper lip. His attempt had not as yet been successful.

Epithelioma of the Inner Canthus of the Right Eye. Presented by

DR. SHERWELL.

DR. SHERWELL said that the case had been sent to him by DR. MacKee last December with a note saying that the patient had suffered from the trouble for fourteen years, and that he had been apparently cured on three occasions by the X-ray treatment; and had been shown at various meetings as evidence of the good results of X-ray exposure—in all for seven years and a half—but it seemed to have lost its effect, although the lesions were greatly benefited at first.

When DR. SHERWELL operated on December 23rd, the patient presented a very bad condition. There was a good deal of tumefaction, of the ordinary epitheliomatous character, affecting the eyelids and conjunctivæ very deeply. Part of the upper and lower lids were destroyed. He placed a suture right through the upper lid to hold it back. The entire lesion was then curetted thoroughly, deep down into the orbit, nearly to the optic nerve. The base of the wound was then cauterized, taking care not to injure the cornea. He had previously told the patient that the cornea and sight might suffer and be lost, but it did not so eventuate. The patient was given repeated applications of the pure acid. The wound was not yet healed but he believed the result would be satisfactory.

DR. BRONSON said that it was a most excellent result, as far as the operation was concerned, though it was difficult to say what would be the ultimate result. So much of the lid had been removed there was danger of the eye suffering from insufficient protection.

DR. FORDYCE said that he was becoming a convert to Dr. Sherwell's method of treating epithelioma with acid nitrate of mercury. He had tried it himself recently and had obtained a very excellent result. The scar was flexible and not thickened, and the result was better than he had secured from chloride of zinc. It was certainly a very valuable agent in the treatment of epithelioma.

DR. JACKSON said that it was an excellent result and very bold surgery. He also, had secured good results from acid nitrate of mercury, following Dr. Sherwell's technique. He had had a case of epithelioma, which he had treated with curettage and arsenic, with a very good result.

DR. JOHNSTON asked if Dr. Sherwell did not consider that the constant running down of the tears might not cause sufficient irritation to determine a recurrence of the process. He suggested the removal of the lachrymal gland. He had had a case in which the patient suffered from this difficulty, and as he was returning home where he could get no surgical assistance, the gland was finally excised, and he seemed to get along very well without it, at least for the three or four weeks during which he remained under observation.

DR. SHERWELL said the question as to whether or not this particular case could be pronounced a cure was a difficult one—from the extent and location of the lesions, that must be obvious to all. He was certainly doing well. In answer to various queries the Doctor said he had used, after curettage, the full strength solution of nitrate of mercury, repeatedly applying it on the conjunctivæ and low down into the inner side of the eye, for about eight to ten minutes, the cornea being well protected by careful assistants. The acid was allowed to act about twelve to fourteen minutes on the lesions around the face and nose—then neutralized in the usual manner with sodium bicarbonate. After a time there could be, and doubtless ought to be some plastic operative procedure to obtain more protection to the eye. The loss of the tear duct caused some annoyance; it might be possible to relieve that by ablation of the lachrymal gland, as was suggested by Johnston.

Peripheral Endarteritis with Symptoms of Raynaud's Disease. Presented by DR. HOWARD FOX.

The patient, A. K., was a Russian, forty years old. He had been under the charge of Dr. Lustgarten for several years and had been presented by him before the New York Dermatological Society on February 27, 1907. Dr. Fox had reported the case at some length in the *Medical Review of Reviews* for May, 1907. The patient had exhibited the phenomena of Raynaud's disease in some of his fingers and toes. The digits affected had, however, never been symmetrical.

There had been gangræne of portions of the fingers and toes and during the past year an amputation of his leg had become necessary. The radial artery of the right side showed no pulsation. On the left side there was a slight pulsation to be felt. The posterior tibial artery was also apparently obliterated. The patient had been given much anti-syphilitic treatment by injections with little benefit. He presented a few patches of buccal leucoplakia. No Wassermann test had been made.

DR. BRONSON said that it was not clear to him how a differential diagnosis could be made between this endarteritis gangræne and Raynaud's disease proper.

DR. KLOTZ said that as far as the diagnosis was concerned, Raynaud's disease, as it was originally described, always appeared in the form of distinct

periodical attacks, not as a continuous process, and generally affected, not a single or several fingers or toes, but simultaneously all the fingers or all the toes or both.

DR. BERK said that he had had the case of Dr. Howard Fox under personal observation with Dr. Lustgarten, at the latter's clinic in the Mt. Sinai Hospital. Before presenting himself the patient suffered violent pains in the ends of the fingers, aggravated on exposure to cold weather. Gradually gangræne developed on two of the fingers, which led to amputation of the end phalanges by some surgeon. When first seen at the clinic he showed Raynaud-like symptoms on both the feet and hands, such as lived discoloration of the toes and fingers, which were somewhat swollen and cold to the touch; at times these parts presented a perfectly white, anæmic appearance. At all times the pain was deep-seated, excruciating and ascending. The rather sudden onset of the trouble in adult age and the pronounced leucoplakia of the angles of the mouth pointed, in spite of the lack of any other supporting symptom, to the diagnosis of lues, with particular participation of the peripheral blood vessels. Under a thorough anti-syphilitic treatment by Dr. Lustgarten, the condition of the patient improved greatly, the pain subsided, the fingers assumed a normal appearance, regained better sensibility and above all, the pulsation in the arteries, which could not be felt for some distance upward, returned to a perceptible degree. The pronounced improvement obtained proved the correctness of the diagnosis of syphilitic endarteritis in this case. That such cases were, nevertheless, subject to recurrences was very clear, because the degenerative tissue changes in the capillary vessels had gone to such an extent as to exclude any restoration and function of the same.

DR. BERK also stated that the Wassermann reaction in this case was positive.

DR. SHERWELL said that he had, at present, a similar case under treatment which he believed to be luetic. The patient had the lesions on the large and middle toe of one foot, with slight symptoms on the other. He had improved very much within three or four weeks, and was steadily gaining. That would bear out the general observation that Raynaud's disease was probably often of a syphilitic character. He had had, however, two or three cases that seemingly were entirely free from lues.

DR. HOWARD FOX said that according to the theory of Raynaud, there was a form of dry gangræne due solely to vasomotor influence and independent of anatomical changes in the vessels. In this case there was plainly an obliteration of the vessels due possibly to syphilis, in which the clinical phenomena of

Lupus Erythematosus. Presented by DR KINGSBURY.

The patient was a thick-set, healthy appearing man, forty-eight years of age. He had had an eruption on his face for the past twenty years, and on his scalp for about fifteen. Practically all of his right cheek was affected and the patch on the scalp was about four inches in diameter. The disease had been persistently treated and during the last five years, the man had had a very large number of X-ray exposures. There was considerable telangiectasia on the face from the use of the rays, but there had been no improvement in the original condition that could be attributed to their employment.

Eucerin, a New Emollient. Presented by DR. JACKSON.

Dr. Jackson showed a new emollient "cucerin," emanating from

Dr. Unna of Hamburg. It was made of vaseline acted on by a substance obtained from wool fat, and it was claimed that it would take up a large amount of water. It made a very cooling salve. Unna had treated two cases of ichthyosis with this preparation, and reported that the skin became very soft, and natural. He regarded it as the best thing he had ever tried for the condition. Dr. Jackson had found it very excellent for various forms of dry skin. One gouty patient who suffered very much from dry skin, had used the preparation for a month and said it was the best thing he ever saw. Dr. Jackson said that he had tried it on several cases of chapped hands with great benefit. He usually combined it with cold cream, about 3 drams to the ounce, and this formed a very nice ointment. He had found it excellent to use on the scalp when one did not wish to use a very greasy ointment.

He showed a mixture of eucerin with olive oil, three drams to the ounce, which also was good for use on a dry scalp.

It could be mixed with almost anything. It did not become rancid.

Dr. Jackson also showed a creamy-white ointment which was remarkable as it consisted of a dram of vaseline containing $1\frac{1}{2}$ drams of water. It was very cooling when applied to the skin, and as it contained no chemicals it should make a fine cold cream.

DR. SHERWELL said that he objected to the cold cream of the United States Pharmacopœia for it had boric acid in it, which was very objectionable; it often caused a double decomposition when other drugs were added.

REPORTS OF CASES PREVIOUSLY PRESENTED.

DR. HOWARD FOX reported that Dr. Siler's case of yaws at present showed no lesions, but that in case it became active he would bring the patient before the Society.

DR. FORDYCE said that the case of hereditary syphilis he presented at the last meeting had cleared up very well.

DR. G. H. FOX said that the case of melanotic sarcoma he presented at the last meeting still presented the same condition.

DR. HOWARD FOX reported his case of pellagra to be improving slowly.

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY

Stated Meeting held December 9, 1909.

DR. SIGMUND POLLITZER in the Chair.

Lupus Erythematosus of the Lower Lip. Presented by DR. LUSK.

The patient was a Russian woman about forty years old. The trouble began on the vermillion border of the lower lip, on the right side, about two years before, and had spread gradually until the entire border was

invaded. There was no lesion elsewhere. Infiltration, horny plugs, adherent crusts or scales, violaceous color, and small excoriations constituted the picture.

DR. WILLIAMS said that the appearance was so like that of so-called eczema of the lip that he would not make a diagnosis of lupus erythematosus, without characteristic lesions elsewhere.

DR. POLLITZER said that he had seen no horny plugs in this case, and he questioned the possibility of their occurrence, as they form only in hair follicles, which do not occur on the lip.

Lupus Erythematosus. Presented by DR. MAC KEE.

The patient, who was a married woman, fifty years of age and a native of Roumania, was from Dr. Fordyce's clinic, and had been presented by Dr. Fordyce at the December meeting of the New York Dermatological Society. Since that time several additional points in the patient's history had been determined which Dr. Mac Kee desired to present. The disease began eight years ago on the nose, soon spreading to both cheeks. At the time of presentation there was a bat's-wing, violaceous lesion involving the nose and cheeks. On both cheeks were seen numerous elevated, violaceous nodules varying in size from a split pea to that of a ten-cent piece. There were no apple-jelly nodules present. There was extensive telangiectasis. There was considerable atrophy and cicatricial tissue, and on the left cheek there was a distinct morphœa-like appearance. The entire face, with the exception of the forehead and the eyelids, was the seat of a hard œdema which produced the effect of scleroderma. When the patient first appeared at the clinic Dr. Mac Kee thought that the telangiectasis, the scarring, and the œdema were due to the excessive X-ray dosage in the treatment of the lupus erythematosus, but careful inquiry failed to elicit a history of X-ray applications or of ulceration. There could be no doubt of the diagnosis of lupus erythematosus, but the speaker was in doubt about the cause of the morphœa-like patch and the extensive and hard œdema or sclerodermatous appearance.

The patient was being treated by ionization by Dr. Trimble, and a further report would be made at a subsequent meeting.

DR. OULMANN said that he had seen several cases of lupus erythematosus treated with the high-frequency current, with some improvement, but that he had never seen a case cured by this method.

DR. WILLIAMS said that he thought the infiltration no more than might be due to the lupus erythematosus itself. He had seen no definite improvement from treatment with high-frequency electricity.

Psoriasis Rupioides. Presented by DR. WEISS.

The patient had already been shown before the Manhattan Dermatological Society, Dec. 3, 1909.

DR. OULMANN said that he regarded this as a case of ichthyosis hystrix. The whole skin was xerodermatous and the lesions did not show the distribution

characteristic of psoriasis. Also, in a psoriasis of the duration of this disease, from 6 to 18 years, one would expect a much greater variation in the symptoms.

DR. MAC KEE said that this might be regarded as an unusual case of psoriasis. Close inspection revealed small papules capped with scales which, when removed, left a moist, bleeding surface. The scales were similar to those observed in cases of psoriasis of the seborrhœic type. There was, also, evidence of scaly papules on the elbows. The long duration of the individual lesions might be explained by the fact that for a number of years every possible precaution had been taken to preserve them.

DR. POLLITZER said that this case called to his mind one published in the *International Atlas of Rare Skin Diseases* about 1890, as parakeratosis scutellaris. That case was not much discussed publicly, but Dr. Pollitzer understood, from informal conversation, that it was generally considered to be one of favus. The present case could not be one of ichthyosis hystrix, as that was a linear nævus, with permanent lesions, whereas here the crusts were easily removed. As ichthyosis hystrix had nothing in common with ordinary ichthyosis, except the name, the dryness of the skin in other places would not support this diagnosis. He found it difficult to accept the diagnosis of psoriasis as it lacked the distribution characteristic of that disease, and the scales were yellow and came off *en masse*, instead of being silvery and coming off in layers. He thought favus the most probable diagnosis, and would like to know the result of a culture experiment.*

DR. WEISS said that he had made a diagnosis of psoriasis by exclusion. Careful search had failed to discover the favus organism. The scales did not at all resemble those of ichthyosis hystrix. Psoriasis was known to produce just such heaped up masses of scales, as was recognized by the older dermatologists. Favus was most unlikely in this case, because in a Russian with such extensive lesions on the trunk the scalp would almost surely be involved also. This case would bear further investigation, as he felt that the tentative diagnosis must be confirmed or corrected.

Lupus Erythematosus of Twenty-Eight Years' Duration. Presented by DR. OULMANN.

This case was presented for its long standing and its extent, as well as for the one patch on the back, the position where we usually found seborrhœic eczema. The entire face, to the upper part of the neck, and the scalp were diseased. The atrophy, due to the long duration, was very marked, the nose was hot and more itchy than the rest of the face. The patch on the back, about 6 inches in length and $2\frac{1}{2}$ inches in width, showed the scales and deep-red, thin skin without any atrophy, notwithstanding the duration of fifteen years. Any kind of indigestion, the smoking of a cigar, or the drinking of coffee would aggravate the disease.

DR. LUSK called attention to the very slight amount of atrophy following the extensive lesions on the face.

DR. WALLHAUSER said that he had seen a case nearly as extensive as this practically cured by the Finsen light at Copenhagen. Any ordinary treatment, as by carbon dioxide snow, would be out of the question in so extensive a case.

* Dr. Pollitzer reported later that he had had cultures made from this case, and that they were negative, except for the ordinary skin saphrophytes.

Lupus Erythematosus. Presented by DR. DITTRICH.

The patient was a Russian, iron worker, thirty-seven years old, married, family history good; he could not think of any affliction in his family like the one he had. Seven years ago he noticed a small papule on the left ala of the nose which, after four months, had spread all over this organ. At the same time a spot developed $\frac{1}{2}$ inch to the left of the nose, which did not spread so rapidly, reaching only the size of a ten-cent piece. On the lobe of the right ear there was a lesion of two months' standing. The case was shown as lupus erythematosus. The lesions were to be treated with carbon dioxide snow and the case again presented at a later date.

Acrodermatitis Perstans. Presented by DR. WALLHAUSER.

The patient was a male, fifty-three years old. About nine years before, he first noticed several vesicles on the dorsal surfaces of both hands, which disappeared in several weeks under treatment by his family physician, who diagnosed the condition as ivy poisoning. About a month later the condition recurred, and since that time he had seldom been entirely free from the eruption; as one outbreak disappeared, another would develop. This condition was limited to the hands for several years, when it appeared on the neck, and gradually spread to the scalp and face. About two years ago, the patient noticed that the slightest injury, such as a pin scratch or the tap of a hammer, as might occur in his occupation as a stonecutter, would be followed by a vesicle which would become pustular and spread peripherally, forming a large superficial ulceration. According to the patient's statement, this condition of spreading ulceration was limited to the scar tissue of previous lesions. An injury in a new location would be followed by a single vesicle at the point of contact, which would disappear in several days. After repeated attacks in a new location, the spreading ulceration would develop, and then, from the slightest injury, the whole adjoining area of scar tissue would become involved before the process could be arrested. The patient had come under observation about a month ago, at which time there was a large superficial ulceration involving the entire dorsal surface of the right hand, which had since healed under an application of bichloride of mercury and a soothing ointment. Microscopical examination of the pus from this lesion showed the presence of the staphylococcus albus.

DR. WEISS suggested that what was apparently white scar tissue might really be the result of a sclerodermatous process.

DR. POLLITZER said that one would think in such a case of epidermolysis bullosa, in which disease, also, bullæ occurred after traumatism; but that was practically a congenital affection and might involve the entire surface, whereas here the disease began at forty-five years of age, and was confined to the exposed surfaces. This last circumstance was very suggestive of hydroa æstivale, but

that also was a disease of childhood. It looked as if the distribution of the disease in this case was determined by the susceptibility of the skin to the actinic rays of the sun.

DR. WALLHAUSER said that the scar tissue could be easily accounted for by the ulceration, which extended through the skin.

Dermatitis Herpetiformis. Presented by DR. KINGSBURY.

The patient was nineteen years of age, born in this country. He was very well developed and appeared to be in good general health. Physical examination was entirely negative. The boy was formerly a boxer of some local reputation, but for some time past he had been unable to appear before sporting clubs on account of the condition of his skin, and was now employed as a plumber's helper. His bowels had recently been quite constipated and his urine contained considerable indican. The eruption first appeared about nine months ago, and since then he had never been free of active lesions. The eruption was now at its height, and consisted of papules, vesicles, bullæ and erythematous plaques. The lesions of particular interest, however, were the bullæ. These were found on the back, upper chest, shoulders and arms. Some of them were the size of a hen's egg. The clinical appearance of the case suggested one of erythema multiforme, but the diagnosis presented seemed warranted by the duration of the eruption, superficial cicatrices on the trunk, pigmentation on the back and buttocks, and finally by the characteristic grouping of the smaller lesions.

DR. MAC KEE said that at a distance the case suggested erythema multiforme bullosum, but on close examination, as pointed out by Dr. Gottheil, at a meeting of the Manhattan Dermatological Society, the apparently erythematous borders of the large patches were found to be made up of groups of small vesicles. The persistence, the location and the exacerbations also spoke strongly in favor of dermatitis herpetiformis.

DR. POLLITZER said that he thought dermatitis herpetiformis the most probable diagnosis, but that he would like to have a more distinct history of remissions and exacerbations before expressing a positive opinion.

Syphilis Psoriasiformis. Presented by DR. MAC KEE.

The patient was a young man from Dr. Fordyce's clinic who had contracted syphilis one year previously. There was no history of any cutaneous affection prior to his syphilis. He first came under Dr. Mac Kee's observation in June, 1909, at which time he presented a very marked syphilis "en nappe" of the face, mucous patches in the mouth, moist papules on the scrotum and psoriasis-like patches scattered over the body. Under rigorous antisyphilitic treatment all the lesions, with the exception of the psoriasis-like patches, slowly disappeared, but these had persisted practically without modification. At the time of presentation there were numerous scaly and crusted patches, about the size of a silver dollar, scattered over the body, both the flexor and extensor surfaces being about equally affected. The knees and elbows were free.

Most of the lesions were very dark in color, thick, fissured, and the scabs were adherent. Others were quite superficial, light in color, and covered with typical, silvery, mica-like scales of psoriasis. The scalp was also affected.

DR. PAROUNAGIAN said that he thought all the lesions were syphilitic, as the lesions were rupial, and the dark crust and erythema around the lesions were typical of syphilitic lesions. The absence of silvery white scales and the absence of lesions at the characteristic locations spoke against psoriasis.

DR. DITTRICH said that he thought this patient would be greatly benefited by the use of Zittman's decoction.

DR. LUSK said that he believed this patient had both psoriasis and syphilis.

DR. OULMANN said that he believed some of the lesions were those of psoriasis, modified by its occurrence in a syphilitic subject.

DR. POLLITZER said that he thought all the lesions syphilitic, on account of the dull-red color, the dirty-gray scales, the infiltration of the skin at the base, and the distribution, none of which were psoriatic. On the other hand, the lesions on the scalp looked more like psoriasis than syphilis, so that a positive diagnosis seemed impossible without further observation.

DR. MAC KEE said that he was still in doubt as to the exact nature of some of the lesions. Most of them were typically syphilitic, but some, the patches on the buttocks for example, presented micaeuous scales, associated with the color and infiltration that were usually found in psoriasis.

Tuberculosis Mucosæ Palati Duri. Presented by DR. DITTRICH.

This case was shown on account of its rarity as a direct involvement of the mucous membrane of the hard palate secondary to a tuberculous process in the lungs. The cases of this kind that were on record, were either due to an involvement through continuity of tissue, starting from the vermillion border of the lip, as a sequel to a tuberculous affection of the face, or due to the infection by secretions from a wound caused by the extraction of a tooth (Rethi, Crocker, Matzenauer, Koszeg, Doutrelepont, Levy, etc.). The patient was an Ameriean, forty-two years old, married, a framemaker. The mueosa of the hard, as well as the soft palate, reaching down as far as the uvula, was covered with irregular, superficial ulcerations with a yellowish-gray covering. When he came under observation two years ago he told the following story:

The trouble began about three years ago. The patient wore a dental plate, but the ulceration began about one-half inch behind the posterior margin of the same. In the beginning there were red spots which soon ulcerated and showed no tendency to heal. He was treated then with what seems to have been nitrie acid, which apparently cured the condition. It reappeared after two months, and it was at that time that he reported to the dispensary for treatment. The clinieal picture was then as follows. On either side of the median line of the hard palate there was a somewhat triangular, dirty-looking verrueous mass, sharply defined anteriorly, but posteriorly merging into the soft palate with but little inflammation. The mass consisted of aggregations of

small, hypertrophic papules. There were two spots where these papules were broken down, forming an irregular, sharply cut, moderately superficial ulceration. About two millimetres from the edge of one of the ulcerations there was a pin-head-sized, translucent, deep-seated, white spot, presumably a tuberculous focus. This subsequently broke down and formed a third ulceration. The microscopic examination made by Dr. Satenstein showed distinct tubercles, containing giant cells. No tubercle bacilli were found.

DR. WEISS advised the use of tuberculin. Local treatment might keep the lesions in bounds, but they would probably extend to the larynx. He had seen good results at the German Poliklinik in the treatment of tuberculosis of the lungs by bacillary emulsion, which was injected every second day in increasing strength. If any fever developed, the treatment was to be discontinued temporarily until the so-called "reaction" had passed. It was certainly worth while trying it in external tuberculosis.

DR. MAC KEE recommended the X-ray for the local lesions. He had previously presented a case of tuberculosis of the lips, nose, mouth and throat which had been apparently cured by such treatment. He usually treated extensive throat lesions by allowing a highly penetrating and filtered ray to pass through the cheek and neck, but when the lesion was localized, a small lead-glass treatment tube, with a funnel-shaped shield that would enter the mouth, could be used.

Arsenical Pigmentation. Presented by DR. KINGSBURY.

The patient was a strong, healthy-appearing Irishman, thirty years old. He was employed as a collector by an insurance company, and was out-of-doors most of the time. The man had had psoriasis for the past sixteen years, and treatment had been vigorous and varied. Arsenic was prescribed for the first time about six years ago, and the patient continued taking this drug for about four years. Fowler's solution was used, and the dosage was from 16 to 20 minims per day. After taking the arsenic for about one year, the man noticed that his skin had changed to a light brown color, and this, in places, continued to deepen until it became quite dark. The condition was said to have improved somewhat during the four years. When presented, the greatest amount of pigmentation was found on the forehead, neck, abdomen and buttocks. On the trunk there were numerous patches of practically normal skin, and the oral mucous membrane was but slightly affected.

Lepra. Presented by DR. PAROUNAGIAN.

The patient, O. P. R., was thirty-three years old; born in Charleston, S. C. Upholsterer by occupation. He was presented at the last International Dermatological Congress for the purpose of showing a well-developed case contracted in the United States, which he had never left. He had spent nine winters in Florida, from 1897 to 1906. He gave no venereal history, nor were there any indications suggesting it. In November, 1907, he visited Hot Springs, Arkansas, and there re-

ceived treatment consisting of inunctions, baths, etc., and upon his return he was very much improved. On this account it was decided to give him anti-syphilitic treatment, which was given in the form of "mixed treatment" in large doses. The following improvement was observed: All the lesions on the face, forehead and ears, which were nodular and some of them quite large, had disappeared to such an extent that no one, at a glance, could suspect that he was a leper. Contractures of some of the fingers had practically disappeared, and the rest of them were very much improved. The lesions on the trunk improved greatly, but upon close examination a very light macular eruption was still noticeable. On the lower extremities, the dark-brownish patches were very much smaller and the anæsthetic areas were smaller and more sensitive to the touch.

DR. MAC KEE said that he had seen the case when it was presented at the International Congress, and that there had been considerable improvement, especially on the face. He believed, however, that still greater improvement would follow X-ray treatment. In the Philippines, where a large number of cases of leprosy had been treated in this manner, very gratifying results had been recorded in all the tubercular and also in a few macular cases. In many instances, after all the lesions had disappeared, the organism could still be demonstrated in scrapings from the nasal mucosa, but in the cases where the treatment had been continued for a sufficiently long period the demonstration became impossible.

DR. PAROUNAGIAN said that he did not claim anti-luetic treatment would cure this disease, especially where structural changes had taken place, only that the treatment had accomplished much good in this case and if it should prove the same in other cases, we would be doing a great deal for these unfortunates. As to the statement made by one of the Health Officers that "Leprosy cases did not progress, but in fact, improved in this climate," he would say that the duration of this case was about five years, and the patient had been in New York about twenty years, excepting nine winters spent in Florida, yet he did not improve, in fact was rapidly growing worse until he was placed under treatment.

CHARLES M. WILLIAMS, M. D.,
Secretary.

PHILADELPHIA DERMATOLOGICAL SOCIETY

December 13, 1909.

DR. C. N. DAVIS, Presiding.

The regular monthly meeting of the Philadelphia Dermatological Society was held at the Pennsylvania Hospital (Out-patient Department), on December 13, 1909, at 8:30 o'clock.

Granuloma Annulare. Presented by DR. HARTZELL.

The patient presented was a girl of fourteen, who gave the history of having first noticed the outbreak one year previously. The eruption

consisted of dime-sized, and smaller, annular lesions with clear, apparently normal centres; the raised rings consisting of small, flat, pin-head-sized, whitish nodules, with no scales. The first outbreak occurred on the left hand between the first and second knuckles; other lesions were found on the right hand, over the knuckle of the index finger, a second ring extending back on the hand. Three exposures to the X-rays had already produced considerable flattening of the rings.

DR. STELWAGON considered that this was a different affection than erythema elevatum diutinum. He referred to the case of this character, exhibited by him to the Society within the last year.

DR. KNOWLES referred to the case of this type presented to the Society last autumn by DR. Schamberg.

DR. HARTZELL said that he had had a case of this character in the nineties; he had shown photomicrographs, taken in the usual way and also by the Lumière method. The sections exhibited mucoid degeneration of the cells in the centre of the nodules, possibly explaining the shape of the lesions. The cases resembled markedly the photograph of the "sarcoid of Beck," in Jacoby's Atlas of Rare Skin Diseases. Histologically there were some features of sarcoma.

DR. DAVIS said that he had seen a case of this character in his practice.

Molluscum Contagiosum. Presented by DR. KNOWLES.

The patient presented was a chubby little girl, of twenty-one months. According to the mother the eruption started last May. There were seven lesions in all, from pin-head to split-pea in size, one however was the size of a hazelnut. The left eyelid, chiefly near the inner canthus, the forehead, the nose and the left cheek were attacked. No history of contagion could be elicited.

DR. DAVIS said that he had found trichloracetic acid the most successful and least objectionable method in removing these growths. The pain was so slight that children rarely minded the operation.

Leucoplakia. Presented by DR. DAVIS.

The patient presented was a male of sixty-five years, born in the United States. The condition started quite a number of years ago, the lesions first appearing on the lower lip. The lower lip was covered by one continuous patch which radiated to the mucus membrane of both cheeks; the upper lip was but slightly attacked. The patches were absolutely typical. The patient used alcohol moderately and tobacco to excess; chiefly chewing the weed. There was also a somewhat generalized eczema present, of some months' duration.

DR. DAVIS said that his first thought in leucoplakia was as to the possibility of a syphilitic origin, treatment being instituted along this line.

DR. HARTZELL said that he rarely considered syphilis as ætiologic in leucoplakia.

DR. STELWAGON said that he did not consider syphilis and leucoplakia as connected, except occasionally, although some years ago such had been his belief.

Follicular Syphilis. Presented by DR. DAVIS.

The patient was a woman of thirty-seven years, born in Russia, with an eruption of one year's duration, limited to the face. The lesions were found on the forehead, the alæ of the nose and adjacent cheeks, and the angles of the mouth. Scar-like pits, pin-head to split-pea in size, were present, resembling those seen in acne varioliformis; the scars were chiefly follicular in origin. There was a distinct loss of tissue, caused by the former active lesions. There were active ulcerating lesions on the forehead, one on the right temple being reniform in shape, one and one-half by one inch in size. There were numerous deep-seated papular, pea-sized lesions on the forehead, grouped, but not confluent. There was considerable infiltration in the active lesions. The pit-like scars were symmetrical in arrangement. Fissures were present at the corners of the mouth.

DR. DAVIS referred to a case of the same character, in a negro, that Dr. Knowles and himself had seen in Dr. Stelwagon's service at the Howard Hospital, the lesions with the subsequent scarring being limited to the alæ of the nose.

DR. HARTZELL said that the case resembled markedly acne necrotica, but there was an unusual amount of scarring for that condition.

DR. SCHAMBERG considered that the scarring resembled that found in syphilis, but thought the ulcerations were only partially follicular.

DR. STELWAGON considered the eruption syphilitic in origin, probably of the small tubercular type.

Maculo-Papular Syphilis with Pruritus. Presented by DR. SCHAMBERG.

The patient exhibited was a male of forty years, stout, weighing over two hundred pounds, and apparently in the best physical condition, excepting for the present disease. The present eruption appeared two months ago, macular in type, generalized; the various concomitant symptoms of syphilis being present. When the case was presented a fading macular eruption was noted, and there were fully fifty mostly flat, dime and smaller sized, raised, some umbilicated, papules, on the chest, forehead and the neck. The patient complained of severe pruritus, this symptom being more noticeable at night. The tops of several of the lesions had been removed by scratching.

Those present referred to the unusual amount of pruritus and to the two distinct types of lesions.

Case for Diagnosis. Presented by DR KNOWLES.

The patient exhibited was a male of forty-five years, short and stout, born in Italy, and a storekeeper by occupation. According to the patient's history, the condition originally started some twenty years ago, and has been relapsing intermittently since then, he having been free from the disease only a few months in the last six years. The patient was first seen a year ago, at which time the eruption was gener-

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alized, excepting the face, the hands and the feet. The lesions were from a dime to a palm in size, sharply marginate, very ~~superficial~~³⁰⁵ mostly circular in shape, pinkish in color, with a thin, almost furfaceous, loosely attached scale, free at the edges and but slightly bound in the centre. Some of the annular lesions had become confluent, forming curious gyrate and festooned lesions. As the lesions disappeared, marked brownish pigmentation was noted on the areas previously attacked. There was a marked pruritus, particularly at night. The eruption had always been of this same type, pigmentation being noted after the disappearance of the active lesions. The eruption would disappear readily under small doses of potassium iodide internally, and a mild sulphur ointment locally, but reappeared immediately if the treatment were stopped for a few days. The pigmentation could not be explained by arsenical or chrysarobin treatment as neither had been used.

DR. STELWAGON said that the lesions resembled those seen in pityriasis rosea, but the recurrences and the pigmentation could not be explained on this hypothesis.

Those present could not decide on a proper classification.

Lichen Planus Annularis (Previously Exhibited). Presented by DR. SCHAMBERG.

Dr. Schamberg exhibited the same patient presented by him at the last meeting of the Society. The condition was practically unchanged, annular lesions being present on the face and dorsal surfaces of the hands. Dr. Schamberg said that he thought two diseases were present, syphilis and lichen planus.

DR. HARTZELL said he thought the eruption was all part of the same disease, probably lichen planus.

Case for Diagnosis. Presented by DR. STELWAGON.

The case presented was a male of twenty-five, who gave a history of having had the present eruption for almost two years. In 1906, according to the patient, he had had a chancre, followed by an indefinite eruption on the shoulder; the history, like in so many other cases, being practically of no value. In the spring of 1907, the lower lip became sore, the mucous membrane became eroded, the redness spread to the cutaneous surface; the epithelium of the upper lip next became denuded, spreading to the skin border. When presented, the mucous membrane of both lips was raw in appearance, very much swollen, œdematosus, and much infiltrated; the redness extended on the upper lip to the alæ of the nose, and on the lower lip, one-half way to the border of the chin. The edges of the patches were sharply marginated, and somewhat elevated. The patches themselves were bright red in color,

with oozing and crusted surfaces; because of the denudation of the epidermis and epithelium the papillary processes could be plainly seen. The patient had been taking "mixed treatment" for almost a year, with but slight improvement. Ulceration had been noticed on the tongue.

DR. SCHAMBERG thought the case probably syphilitic with an accompanying lymphangitis.

DR. STELWAGON said that his original diagnosis had been syphilis, but the response to treatment had been extremely slow.

Extensive Tinea of the Bearded Region. Presented by DR. FINCK.

The patient exhibited was a male of forty-two years. The present outbreak appeared some weeks ago with annular lesions on the bearded region; these areas increased in size, some became the size of a palm, while others were as large as a fifty-cent piece. The patches were very superficial, there was no follicular involvement and no hair loss. The entire bearded region, excepting the moustache area, was attacked.

The diagnosis was concurred in by all present.

Sarcoma of the Jaw, in a Boy. Presented by DR. SCHAMBERG for DR. PFAHLER.

The boy presented was nine years of age, and had been exhibited to the Society some nine months previously by Dr. Pfahler. At the time the patient was originally presented there was a hazelnut-sized swelling on the gingival border of the superior maxillary bone. Since then this tumor had been treated eighty-five times with the X-rays, with the result that the condition was apparently cured. A leather filter was used, to prevent radiodermatitis.

FRANK CROZER KNOWLES, M. D.,
Reporter.

REVIEW
of
DERMATOLOGY AND SYPHILIS.

Under the charge of GEORGE M. MAC KEE, M. D.

INFLAMMATIONS.

By HARVEY P. TOWLE, M. D.

The *Ætiology of Pellagra: The Maize Theory, or the Theory of Lombroso.* J. J. WATSON, *Jour. S. Carolina Med. Assn.*, Nov., 1908.

In this paper Watson gives the main facts of Lombroso's theory of the connection between maize and pellagra. He says that the theory is based upon the following facts: (1) Maize is the staple cereal consumed by the inhabitants in pellagrous countries. (2) Pellagra is now recognized as a disease in every maize producing country. (3) Extracts made from damaged maize will produce, in man and animal, symptoms similar to pellagra. (4) Symptoms similar to pellagra have been produced in animals by feeding them on damaged maize or corn.

Lombroso began his work in 1864, and his theory of damaged maize is now universally accepted. In moisture certain fungi (*Penicillium*, *Aspergillus*, etc.), grow upon maize and produce a toxin which is the cause of pellagra. Lombroso claimed that his experiments upon men and dogs and chickens proved his theory, and Watson states that the experiments have been confirmed by others.

Watson himself is thoroughly convinced that damaged maize is the cause of the disease in this country. While the local corn is thoroughly cured, he believes that western corn becomes heated before reaching its destination, and when sold is infected by fungi, as his samples, secured from the markets, show plainly.

The Protozoan Theory of Pellagra. J. H. TAYLOR, *Jour. S. Carolina Med. Assn.*, Nov., 1908.

Because of Samson's suggestion of a possible protozoan origin of pellagra, Taylor sets forth what he considers to be striking similari-

ties between pellagra and two protozoan diseases, syphilis and sleeping sickness.

(1) In type all three are essentially slow progressive toxæmias.

(2) Remissions are distinct and present in each.

(3) Symptomatically, they are similar, in prodromes and in the fact that in all, a striking skin eruption is a salient feature.

As to general symptoms he points to the fact that a "gradual tendency to weakness" is common to them all.

But in the nervous system, to his mind, occurs perhaps the most striking similarity of all, namely, that of the nervous symptoms of pellagra and paresis. He admits certain differences, however.

Taylor quotes Lombroso to the effect that pathologically most typical cases of pellagra suggest incipient tabes—but with this difference: In pellagra, few changes are found below the dorsal region, while in tabes, the chief changes occur in the lumbar region. On the other hand, both affections cause degenerative changes in certain definite portions of the cord—tabes in the posterior columns and pellagra in the lateral columns, or in both lateral and posterior.

Geographical Distribution and Aetiology of Pellagra. SAMBON, *Jour. S. Carolina Med. Assn.*, Feb., 1909.

Sambon's views are of interest as he is one of the chief opponents of the maize theory of the origin of pellagra. After briefly reviewing and rejecting the various other theories in regard to the aetiology of pellagra, Sambon passes to a consideration of the maize theory. This, he says, is no better supported than the rice theory of beri-beri, "but it is quite possible that maize may be a necessary aetiological factor to the production of the disease." As yet, however, he does not consider that any conclusive evidence has been advanced in support of the maize theory. The supporters of this theory assert that pellagra appeared only after the introduction of maize. Sambon maintains that it is not known definitely when maize was introduced into Europe. It is, however, certain, he says, that it was used as food in Italy as early as the middle of the sixteenth century, that is, two hundred years before the appearance of pellagra. Frapolli, who described the disease in 1771, believed in the great antiquity of pellagra, and considered it the same as pellarella mentioned in 1578 in the regulations for admission to the Hospital-Major of Milan. Moreover, the areas of maize-eating and pellagra by no means overlap. Hence the origin of the term pseudo-pellagra to cover those cases occurring without maize. According to Sambon, "all available information tends to prove that pellagra is limited to low-lying districts or to other localities with a high water-table." A very important fact is, he continues, that pellagra does not attack maize users indiscriminately, but only the field laborers. Towns are generally immune. "Hence it seems that the victims must come in con-

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tact with the specific agent in the maize fields and possibly through the agency of some biting fly." Sambon also considers the seasonable recurrences to be an argument against toxins and in favor of some living organism. These facts seem to him so incompatible with the maize theory that he "regrets its unquestioning general acceptance." If asked for a theory Sambon would suggest as a working hypothesis the many analogies between pellagra and some of the protozoan diseases.

The Pellagra Conference at Columbia, S. C., Nov. 3 and 4, 1909 *Jour. S. Carolina Med. Assn.*, Nov., 1909.

The views of the Pellagra Conference in regard to pellagra are expressed in the following resolution, which was adopted:

"*Resolved*, That while sound corn is in no way connected with pellagra, the evidence of the relation between spoiled corn and pellagra seems so apparent that we recommend that such measures as are necessary to prevent its use as food be instituted pending further investigation of the subject."

Symptomatology of Pellagra. J. J. WATSON, *Jour. S. Carolina Med. Assn.*, Nov., 1909.

Watson, who has had considerable experience, gives the symptoms of pellagra as follows:

Prodromal symptoms, whose existence so many writers doubt, do occur, although the disease is insidious. Watson declares that a history of a gastro-intestinal derangement for a longer or shorter period before the appearance of the characteristic symptoms can always be obtained. Diarrhoea is the most constant, although in mild cases there may be constipation. Loss of weight also occurs, especially when there is diarrhoea. Then, after some months, the characteristic erythema of the exposed parts appears, usually in the spring time. By some the intensity of the erythema is considered an index of the severity of the infection. A characteristic feature of the erythema, according to Watson, is a triangle on the back of the hand or wrist, with its base, not over two inches in length, on the radial side of the arm. Desquamation follows the erythema and a characteristic light liver or chocolate color. The eruption usually begins in February or March, continues until June, then fades gradually, until by July or August it has disappeared. In some localities the eruption recurs in October, but ordinarily it does not reappear until the next spring. The recurrent attacks pursue the same course as the first, but are apt to be more severe. The disturbances of the cutaneous system, just described, constitute one of the three great characteristics which distinguish pellagra.

A second cardinal symptom is the involvement of the gastro-intestinal tract. Diarrhoea occurs in some stage of the disease, usually before the eruption appears.

Watson also considers the appearances on the tongue to be characteristic. At first bright red on the tip and sides, the tongue soon becomes universally reddened, and its surface smooth and glistening. Salivation accompanies these manifestations, and in severe cases, is extreme. There is also swelling of the gums.

According to Watson, eye symptoms occur in eighty per cent. of the cases, usually dilatation of the pupil, either bilateral or unilateral. When unilateral, the right pupil suffers more often than the left. Diplopia is not uncommon.

The third great characteristic of pellagra is involvement of the nervous system. Tenderness at some point along the spinal column, most frequently in the mid-dorsal region, is almost constant. Analgesia or anaesthesia of the backs of the hands occurs. Pain in the back is a striking feature. The gait becomes paralytic or paralytic-spastic. Psychic phenomena are very common, from more or less deep mental depression to the profoundest melancholia. The nervous symptoms vary greatly in different localities, manifesting themselves in one form in one territory and perhaps in a very different form in another.

The pulse is said to range between 90 and 100 and the temperature between 97° and 100°.

The urine is decreased and in severe cases is said to be alkaline.

Watson has never seen the typhoid-pellagra, nor has he found alcoholism a frequent complication.

Acetonæmia is a frequent complication here, as it is in Egypt, and, as one would expect, the patients are often victims of phthisis.

Pellagra and Some of Its Problems. JAMES NEVINS HYDE, *Am. Jour. Med. Sc.*, Jan., 1910.

In this article Dr. Hyde covers the ground very thoroughly, giving both his own views resulting from a personal investigation and the views of others. Dr. Hyde believes that although pellagra is a disorder of admitted contradictions, yet a "conscientious study of the disease leads to the conviction that pellagra, in its complexus of symptoms, is a distinct affection, resembling none other, and, despite irregularity in the order of its manifestations, impressed with a definite and characteristic physiognomy."

Where men are the chief field laborers they suffer more than women, but elsewhere more women are affected than men. The chief predisposing factor is the asthenia of poverty-stricken, poorly-nourished subjects. Although the disease is not hereditary, children may be stricken at an early age. The majority of cases occur, however, between the close of the second and fifth decades. The probable geographical limits of the disease Dr. Hyde gives as between latitudes 40° and 50°.

The intoxication manifests itself chiefly upon the nervous, cuta-

neous and gastro-intestinal systems, but the order and importance of these have not been determined exactly.

The views in regard to the existence of prodromal symptoms are confusing, as some doubt their existence, while others maintain that they appear year after year before the onset of characteristic symptoms. Dr. Hyde seems to think that spring may bring unwonted lassitude and malaise. The temperature may be normal throughout the course of the disease, while the gastro-intestinal symptoms may improve at the time of onset of the cutaneous efflorescence.

One of the characteristics of the disease is the erythema which usually appears abruptly in the spring upon the uncovered parts, symmetrically distributed. At times the erythema begins as discrete macules which speedily fuse, forming an uniformly smooth, reddened and distinctly outlined area. In mild cases, however, the macules may disappear without fusing, but this is not the rule. From this fusing results the "pellagrous mask" on the face, the "pellagrous glove" on the hands and wrists, and the rarer "pellagrous boot" upon the feet and legs. A characteristic symptom, according to Hyde, is an erythema encircling the neck (the pellagrous collar), marked below by a line corresponding to the top of the shirt, above by the chin, while behind it reaches from the collar to the hairs of the occiput. The dorsa of the hands present probably the most common and most vivid expression of the disease, sparing the nails and palms. Dr. Hyde speaks of a triangle upon the backs of the hands which has been described by Dr. Watson as characteristic; when the feet are exposed they show appearances similar to those upon the hands. The color of the exanthem varies with the color of the subject and the duration of the eruption. At the outset reddish rather than pinkish, the color deepens later on and does not disappear on pressure. At its height the hue is a reddish-brown, chocolate or plum-colored shade. The first attack may disappear in a fortnight with epidermic exfoliation in light flakes, leaving behind a pigmentation differing according to the precedent engorgement. The skin thus affected is tense, swollen, and the seat of burning rather than pruritic sensations. Those cases which develop vesicles and bullæ are popularly termed "wet." They are decidedly rarer than the "dry" forms (without vesicles or bullæ), and are believed to accompany the most severe phases of the systemic disorder. While in Italy the erythema ordinarily recurs in the spring, in America many cases recrudesce in the autumn. This is the second stage. The skin again redds, perhaps not so vividly as before, and the redness passing, leaves the skin seamed, corded, rugous and irregularly roughened. After one or more attacks of erythema the skin atrophies at the site of the exanthem, leaving a thinned, cicatriciform, parchment-like integument, often irregularly altered, the thinning showing occasionally in striae parallel with

the long axis of the hand, rarely as a definitely bordered scar as after ulceration. In severe cases there may be ulceration of the backs of the hands. Occasionally, also, marked ecchymoses may occur with the erythema. Unlike some severe dermatoses, in pellagra death does not destroy the evidences of the severity of the roughening of the skin.

The exanthem belongs to the order of the toxic erythema. The sun acts as a stimulant in its causation, but "the erythema is incontestably not solely a reactive result of exposure to the actinic rays. Both the actinic rays and the systemic condition are essential to the production of the erythema. Given the general toxæmia, even a feeble exposure to light suffices to bring out the erythema."

The nervous and psychical disturbances become more pronounced in the second stage, in America mounting even to insanity more frequently than is the case in the Italian type. Regarding the statement sometimes advanced that demented pellagrins have a tendency to commit suicide by drowning, Dr. Hyde could find no confirmation in an analysis of the statistics.

Gastro-intestinal symptoms occur in all the stages, and are not infrequently the most intractable feature of the disease.

The tongue shows manifestations varying from a simple redness to the so-called "bald" tongue resulting from exfoliation. Salivation is associated. In some cases Lavinder's "stipple" tongue occurs, *i. e.*, a blackish pigmentation at the tips of some of the filiform papillæ, occasionally in association with similar appearances upon the rectal and vaginal mucosæ. As a rule there is diarrhoea or even dysentery with bloody stools, although there may be constipation.

The third stage is merely an exaggeration of all the symptoms of the previous stages. Opisthotonus is a striking feature in this stage, and is quite constant. Coincidentally there is tenderness along the spine over the points of exit of the spinal nerves. As a result of neurological examinations three groups of cases were found—(1) probable pyramidal tract degeneration; (2) posterior column degeneration; (3) combined degeneration.

Blood cultures made in nine cases were negative. The examinations of the blood showed a mild anæmia and a mononuclear increase. Microorganisms were absent. In thirty cases examined, Dr. Howard Fox failed to get any positive reactions with the Noguchi test.

Hyde raises the question as to whether the majority of patients in America were first insane and later became pellagrins, or whether they were first pellagrins and later, either as a complication or a consequence of the affection, became insane. He answers the question by saying that he believes "the evidence conclusive that many inmates of asylums were insane before they became pellagrous."

The cause of pellagra is unknown. While the mass of the evidence

favors some connection between corn and pellagra, Dr. Hyde believes that the disease may occur without corn, and also believes that certain experiments often quoted in support of the corn theory need further proof.

Finally, he states that he does not believe that pellagra will ever be so general or so widespread with us as it is abroad, for, compared to the poor of other countries, our poor do not know what poverty is.

The article is accompanied by an extensive bibliography.

The Prophylaxis of Pellagra. C. H. LAVINDER, Reprint No. 43, *Public Health Reports*, xxiv, Oct. 20, 1909.

Prophylaxis and ætiology are bound together so closely that upon the views held as to the ætiology depend the measures necessary for prophylaxis. According to Lavinder, there are two large opposing groups in regard to the ætiology of pellegra: the Zeists, who maintain that spoiled maize plays an important part in the production of the disease, and the Anti-Zeists, who deny the relationship of corn to pellagra, and assert that pellagra is not a morbid entity, but merely a symptom complex occurring in alcoholics, insane persons and in other depressed states. The majority of students of the disease belong to the Zeist party, but while agreeing as to the connection of pellagra with corn, they differ among themselves as to the nature of that connection. They may be divided into three groups according to their conceptions of the ætiology of the disease—those who consider it an intoxication (toxico-chemical theory); those who believe it an auto-intoxication (toxico-infective); and those who believe it the result of a specific infection either by bacteria, molds or protozoa.

Regarding the present apparent epidemic of pellagra, Lavinder says that "Analysis of the situation, however, shows that its seeming rapid growth and origin among us is only apparent, not real. While pellagra is unquestionably increasing there is undoubtedly evidence that the disease has existed here for thirty or forty years, and perhaps much longer. The present situation is probably largely the result of more widely diffused knowledge of the disease leading to the recognition of already existing cases. Moreover, all the evidence tends to prove that the disease is not communicable."

As to prophylaxis, Lavinder calls attention to the fact that pellagra is not an acute disease, but is chronic, which requires "not months but years of feeding on spoiled corn before a community begins to develop the disease." One great difficulty in prophylaxis is the fact that it is not always easy to distinguish spoiled corn from good corn. Lavinder believes that it is impracticable and unnecessary to entirely suspend the use of corn. He does believe, however, that for the present, at least, we must base prophylactic measures upon the assumption that some relation does exist between corn and pellagra. His reasons for this as-

sumption are that pellagra was unknown in Europe before the introduction of corn; that it is an endemic disease confined, largely at least, to populations which grow and eat corn, and more especially to those who eat the poor grades of corn; that the great majority of students of the disease regard it to be somehow connected with the use of corn; that the Italian and other prophylactic measures are based almost entirely upon this theory, and that as an outcome of such measures good results are claimed. In Italy the government inspects all corn before allowing it to be placed upon the market, and has established schools of instruction to teach better methods of cultivation and handling. As a result Lavinder says that recent statistics show a decrease of pellagra in Italy from 98,000 in 1879, and 104,000 in 1881, to 376 in 1907. Moreover, even granting that these statistics are not accurate, general opinion confirms the view that pellagra is decreasing.

Notes on the Prognosis and Treatment of Pellagra. C. H. LAVINDER.

Reprint No. 40, *Public Health Reports*, Sept. 10, 1909; also
Jour. S. Carolina Med. Assn., Sept., 1909.

Lavinder opens his discussion with the statement that there are two factors which must be considered in regard to prognosis—our brief experience, and the fact that most of such experience as we have had in this country has been based upon asylum cases. Generally speaking, the prognosis in this country is grave as to final and complete recovery. The mortality among asylum cases is estimated at 67%. Lavinder considers the American view to be fairly stated in Allbutt's System, to the effect that three or four recurrences and especially any affection of the mind, give a bad prognosis. It is safe to assert, he thinks, that the earlier the diagnosis is made and treatment begun the more favorable the outlook, comparing pellagra in this respect to the situation in regard to tuberculosis. The chronic types, without mental involvement, give the most favorable outlook, while acute manifestations are always of grave import. Fever he regards as a danger signal, as uncomplicated pellagra is a feverless disease. Lavinder says, further, that his experience leads him to believe that moist, extensive erythema are frequently accompanied by grave constitutional changes. Mental involvement is always grave.

In regard to treatment, he considers prophylaxis to be of paramount importance. Among other remedial measures, Lavinder mentions a liberal diet; baths and cold douches for paresis and for the intolerable burning in the skin; salt rubs or frictions in the young or those with arrested development. Among drugs he mentions Fowler's solution in gradually increasing doses and arsenious acid. In vertigo progressive doses up to thirty drops a day of Tr. Coccus Orientalis sometimes afford relief. For the dry erythema, oily preparations and possibly Tr. iodine are advised, and for the moist, a one per cent. solu-

tion of picric acid. Atoxyl has been tried, but the results have varied greatly. Inasmuch as it has been demonstrated that antibodies are present in the blood of pellagrins, there is hope that in time a curative serum may be discovered.

Pellagra—A Précis. C. H. LAVINDER, Reprint, *Public Health Reports*, July, 1908.

The purpose of this pamphlet is to assemble in readily available form the prevailing views of pellagra. Under separate headings, such as history, distribution, aetiology, symptomatology, prognosis and treatment, Lavinder gives a brief summary of the facts published at that time. In the main the account agrees with the views held at the present time. As regards the aetiology of the disease, Lavinder states that "It is the acceptable opinion of most students that pellagra is an intoxication due to using as food Indian corn (maize) which, under the influence of unidentified parasitic growths (fungi) has undergone certain changes with the production of one or more toxic substances of a chemical nature." After briefly mentioning and as briefly dismissing various other theories in regard to the aetiology of pellagra, Lavinder ends by saying that "The disease generally occurs among the poorer classes of the rural population who subsist largely, or exclusively, on corn, most usually prepared by boiling corn meal in salt water (called "polenta" in Italy). Observation also shows that in pellagrous countries the corn is often of poor quality, gathered before maturity and not properly stored and cured so that parasites more easily develop upon it.

The seasons, heat and the sun have only an indirect influence upon the production of the disease, while, according to Lavinder, neither sex nor climate has any influence. He gives the age incidence as from twenty to forty and states that the disease is rare in infants. He regards alcohol merely as a predisposing factor in so far as it lowers the powers of resistance, although some believe that alcohol distilled from spoiled maize may contain the poison. He does not consider the disease to be either hereditary or contagious.

The pathological changes reported were not constant or characteristic. Tuczek is quoted as describing three conditions—"Atrophy of the muscular coat of the intestines with occasional hyperæmia, and ulceration of the lower part of the tract; abnormal pigmentation (similar to senile change) especially of the ganglionic cells, heart musculature (brown atrophy) hepatic cells and spleen; alterations in the nervous system." The brain is usually negative, but in the cord degenerative changes in the lateral columns of the dorsal region were fairly constant, with but few changes found in the lumbar cord.

Lavinder gives three symptoms as characteristic and essential to the diagnosis: An erythema of the skin, digestive disturbances and involvement of the nervous system. According to the intensity of the

symptoms, regardless of the duration, the disease is divided into three stages: Mild in the first stage, the symptoms increase in severity with greater or lesser rapidity until what is called the second stage is reached and, continuing to increase in intensity, pass on to the third or terminal stage. The disease usually begins in the springtime with more or less pronounced digestive disturbances, generally with diarrhoea, although occasionally with constipation. Sooner or later these symptoms are followed by the characteristic erythema and then by symptoms of involvement of the nervous system.

Lavinder says of the characteristic erythema that it almost invariably appears in the springtime, develops during the summer and fades in the winter. It is symmetrical and occurs upon the uncovered parts selecting at first especially the extensor surfaces, backs of the hands and forearms, the face, the back of the neck, the upper chest and the dorsal surfaces of the feet. Later the flexor surfaces become involved, but the palmar and plantar surfaces always escape. It is accepted that the actinic rays of the sun are merely the exciting cause of the erythema.

In the beginning the skin is red with burning and itching and some puffiness. The color disappears on pressure but returns promptly. After some days bullæ may appear, both discrete and confluent, whose contents may be either serous, sero-purulent or sanguinolent. The œdema may then disappear, the epidermis becomes dry and desquamates in small flakes. At other times the skin may become pigmented, brownish or blackish, chocolate or plum-colored, after the disappearance of the redness, and then dry and exfoliates without any previous bullæ formation. After the first attack the pigmentation remains for a considerable length of time. With each recurrent attack it becomes more and more permanent and at the same time the skin becomes indurated, thickened, hard, rough and sealy. The elasticity disappears and the natural folds of the skin deepen. Finally there may be atrophy and thinning with striae like the *striæ gravidarum*.

In the form known as "pellagra sine pellagra," the erythema is lacking, but the generally accepted opinion is that this absence is only temporary, and that later in the course of the case the erythema appears as in the ordinary cases.

As the disease progresses in any given case the general symptoms do not always increase in equal degree. According as one symptom or another predominates in the clinical picture the case is sometimes referred to as being of the gastro-intestinal type, the nervous with mania, the nervous with paralysis (pellagrous myelitis), pellagra sine pellagra or typhoid pellagra (not a very definite type); rather a complication.

The duration and course of pellagra are indefinite. One year the attack may be light and the next year severe. Some cases have remained

stationary in the first stage for as many as twenty years, while others have reached the second stage or even the third in the first or second attack.

Pseudo-pellagra means to Lavinder a mistaken diagnosis; that the affection is not pellagra at all.

Except in some mild cases in the first stage the prognosis is grave, and in the late second and in the third stage hopeless.

Treatment has proved of little value. The chief reliance has been placed upon hygiene and arsenic.

The Prevalence of Pellagra in the United States. C. H. LAVINDER,
C. F. WILLIAMS and J. W. BABCOCK, Reprint, *Public Health Reports*, XXIV, No. 25, June 18, 1909.

In 1907 a number of pellagrous cases were reported independently by the medical officers of Alabama and South Carolina asylums. These were identified with Italian pellagra by two physicians who visited Italy in 1908 for the purpose of studying the disease. Since then cases have been observed in several localities. For the past year and a half the Public Health and Marine Hospital Service has been investigating the disease in coöperation with the Research Committee of the South Carolina Board of Health. The replies to a circular letter indicate that in thirteen states there are records of about 1000 cases, more than one-half being in asylums or similar institutions, and that sporadic cases of pellagra have occurred in many states. One of the writers considers conservative an estimate of 1500 cases in the Southern States since 1906.

Pellagra in Yucatan. GAUMER, *Jour. S. Carolina Med. Assn.*, Nov. 1909.

Pellagra was not epidemic in Yucatan until 1884 when, following the importation of corn from the United States, because of the failure of the local crop, it became prevalent. This imported corn was carelessly shipped, often as ballast, and frequently so damp that it fermented and developed a fungus, the *Sporisorium maidis*. The country continued to import corn until 1891, when importation ceased, as the local crops sufficed. Coincidently with the cessation of importation new cases of pellagra ceased to appear. From 1901 to 1907 more corn was imported than ever before and pellagra again became epidemic, this time among both rich and poor. By the end of 1907 "about ten per cent. of the total inhabitants were victims of the disease and at this writing not less than eight per cent. of the adult population have pellagra."

Gaumer is a believer in pseudo-pellagra for, after describing the symptoms of true pellagra, he goes on to say that pseudo-pellagra can always be traced to liquor. Up to 1900 their liquor was distilled from

the home product and pseudo-pellagra was unknown. Since 1900 the liquor has been distilled from corn brought from Central America, and cleverly doctored with essential oils from New York, and pseudo-pellagra is now common.

Another type which Gaumer recognizes is pellagra which he says is characterized by its lack of constitutional symptoms, and is a purely local condition due to exposure to the direct rays of the sun and inclemencies of the weather. He claims moreover "that any two or all three of the conditions may and often do exist in a patient at the same time."

Pellagra. S. M. SANDWITH, *Jour. S. Carolina Med. Assn.*, Nov. 1909, V, No. 11.

With two or three exceptions Sandwith was the first to write on pellagra in English. He first became interested in the disease in 1893 while studying ankylostomiasis in Egypt after which he went to Italy to study pellagra and was able to identify the Egyptian variety from the Italian without difficulty. Maize, he says, was introduced into Egypt from Syria about 1840, yet pellagra was not recognized until 1893, although it may have existed for years. Suspecting that there were cases in the United States, he wrote for information, but was told that there were none. In 1905, while visiting Boston, he says that he saw a pellagrous eruption in an Italian immigrant at the Boston City Hospital.

On account of his suggestive experience, Sandwith suggests an examination of all patients in the out-patient departments of hospitals, in private practice and in asylums, in order to ascertain with more accuracy the prevalence of pellagra. To illustrate his points he writes of the result of an examination he made of 500 Egyptian peasants who were actually at work in the fields. All stoutly denied that they were ill and their employer testified that all could do a fair day's work. "Yet in every field I found early cases of pellagra, varying from 15 per cent. in well-to-do districts to 62 per cent. in the inhabitants of the poorest hamlets." A complete census, he thinks, might show that men and women suffer equally. Sandwith would not accept the diagnosis of pellagra in non-maize eating persons without an exhaustive investigation. He likens the relation of maize to pellagra to the relation of the mosquito to malaria; an uninfected mosquito cannot communicate malaria. The term pseudo-pellagra he considers unnecessary because based upon a faulty diagnosis.

In early cases without mental symptoms he is hopeful of recovery from a liberal diet without maize and relief from the hook-worms which he found so often coëxistent, although the symptoms will return if a maize diet is resumed. In advanced cases he has found arsenic useful.

Sandwith's conclusions are: (1) That without maize there is no pellagra. (2) Maize is often used without causing pellagra. (3) The well-

to-do with a varied diet and maize only occasionally, usually escape. (4) The fault lies not with good maize but with bad. There is a considerable concensus of opinion among Italians that the *Penicilium glaucum* is the cause. (5) The extent of pellagra corresponds not with the area of the use of good maize but only of the spoiled product.

The Fungus *Diplodia* as a Possible Factor in the Ætiology of Pellagra.

REED, *Med Jour.*, New York, Jan. 22, 1910.

Reed, who is Professor of Mycology at the Virginia Polytechnic Institute, was led to undertake the investigation reported in this paper by his knowledge of the fact that the fungi, *Aspergillus*, *Penicilium* and *Mucor*, have for years been known to exist upon corn. It therefore seemed to him more reasonable to attribute the abrupt appearance of pellagra to the advent of a new organism than to suppose that these fungi, which presumably have existed ever since corn has been grown, have all at once acquired a new toxicity. As a result of inquiry he found that coincidently with the spread of pellagra a new disease, known as "dry rot" or "cornstalk disease" had appeared, and had become so extensive and destructive as to attract the attention of maize growers. He found also that the regions in which this "dry rot" was prevalent were the very regions in which pellagrous epidemics occurred. Reed obtained specimens of this "dry rot" and investigating them, discovered that it was due to a new fungus which he identified as the *Diplodia zeæ*. The same fungus also occurs in European countries in which pellagra is prevalent. Since February, 1909, Reed has been studying this fungus by means of cultures and extracts. Upon injection he found it toxic for mice. He says, further, that sterile corn meal inoculated with the *Diplodia* yields different compounds from the uninoculated corn meal and that these *Diplodia* products appear to resemble in every way the so-called "Pellagrozein" isolated and described by Lombroso. Reed thinks that possibly the *Diplodia* may play a part in the ætiology of pellagra.

Corn and Pellagra.

D. R. SILVER, *Jour. Am. Med. Assn.*, Feb. 5, 1910.

Dr. Silver publishes a letter which he received from an ex-president of the Ohio Grain Dealers' Association which is very suggestive in the light of the spread of pellagra in the United States and the theory that there is some, although not definitely known, connection between the habitual use of spoiled corn and pellagra. Dr. Silver's correspondent states that he had never had trouble with corn shipments until within the last half dozen years. Many farmers, he says, make no effort to cure the corn sufficiently so that it will bear transportation. The more moisture the corn contains the heavier it weighs. Therefore, before it can reach its destination it becomes heated. If the corn becomes too bad the consignee refuses to accept it "in which case it is rushed to

the nearest terminal and put through a dryer." (A dryer is a large building artificially heated, into which the cars carrying the corn can be run and their cargoes dried without removal.) As fast as it is dried and cooled it is disposed of. "Where does it go? I do not know to a certainty. I formerly thought that it went to the distilleries and a portion of it may go there, but I fear that much of it is sold at a discount of from 10 to 50 per cent. Some of it is exported after mixing with good corn. The best is selected and made into meal and, costing so much less, can be sold at a very attractive price to those whose means are limited. . . . I remember that some four years ago nearly every shipment (to Europe) from November until March arrived at its destination out of condition. . . . The Atlantic and Gulf coasts are the greatest sufferers from pellagra and they get their supply of meal from the North. . . . Philadelphia, Baltimore, Buffalo, Cleveland and Columbus, Ohio, have very extensive dryers and large mills. The South is an excellent customer. The temptation of unusual profits is great. . . . I have learned that the distillers do not use much, if any spoiled corn. It will not make good spirits. It does not make good fertilizer. . . . The real profit comes through mixture with grain." The writer infers that as the Atlantic coast will buy anything so long as it is cheap, much of this inferior corn is disposed of there. He believes that this inference is justified by the fact that the very time during which he has had the most trouble with spoiled corn coincides with the rapid spread of pellagra in the South.

In his comment upon this letter, Silver thinks it even possible that the prevalence of pellagra in asylums and schools may be explained on the ground that under the contract system of purchasing supplies, the temptation is great for the contractor to make an unusual profit by mixing spoiled corn with the good.

NOTICE.

ELECTION OF NEW OFFICERS.

At the 34th Annual Meeting of the American Dermatological Association, held at the Arlington Hotel, Washington, D. C., May 3, 4 and 5, 1910, the following officers were elected for the ensuing year: President, Dr. Douglass W. Montgomery, of San Francisco; Vice-President, Dr. Martin F. Engman, of St. Louis; Secretary and Treasurer, Dr. James M. Winfield, of Brooklyn; Councillor-at-Large, Dr. Charles J. White, of Boston. Boston, Mass., was selected as the next place of meeting.

ERRATUM.

In Dr. Pernet's discussion of Dr. Hartzell's article on pemphigus vegetans, appearing on page 116 of the present volume, twelfth line from the bottom, "impure culture" should read "in pure culture."

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SPOROTRICHOSIS IN MAN.

WITH INCIDENTAL CONSIDERATION OF ITS RELATION TO MYCOTIC LYMPHANGITIS IN HORSES.*

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and

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IN the early Spring of the year 1909, it became known that on a certain farm in North Dakota, some horses had been ailing with a disease, the nature of which does not seem to have been recognized by the owners. Two of them died.

In the month of November of the same year, the facts were reported to the State Veterinarian, Dr. N. S. Crewe. The Assistant Veterinarian of the State, Dr. Thomas G. Kenney, was accordingly despatched to the farm where he examined the animals and pronounced them to be the subjects of glanders. They were described by him as suffering from a profuse and exceedingly foetid nasal discharge, deep ulceration of the septum nasi, and typical dense induration and enlargement of the lymphatics. In these animals the bacillus mallei was neither sought for nor recognized. As a consequence, on November 8, 1909, four horses were killed and their carcasses burned. These data were communicated to us chiefly by the two veterinarians named.

On December 3rd of the same year, J. A. was brought to me from the same locality in the State, suffering from what his physician believed might be farcy. He was a farmer, twenty-four years of age, married but a few weeks before, stalwart, well developed, weighing one hundred and fifty pounds, and giving no history of previous disorder of himself nor of the members of his family. He was accompanied by his father who was an equally vigorous and whole-

* Read before the 34th Annual Meeting of the American Dermatological Association, Washington, D. C., June 3-5, 1910.

NOTE: The authors desire to express their thanks to the authorities of the Memorial Institute for Infectious Diseases for facilities available during the preparation of this paper.

some-looking man. All of the functions of the patient had been properly performed.

The farm of this young man adjoined that on which were the horses pronounced by the State authorities to have suffered from glanders. The patient was certain that he had visited this farm, but did not remember that he had been in contact with any one of the condemned horses. There is some evidence, however, that this had occurred.

Between forty and sixty days prior to the date of examination by ourselves, a pustule had appeared at the site of a hair follicle on the back of the left hand, the lesion gradually enlarging and surrounding itself with a halo due to an intensely severe grade of inflammation, after the development of which the morbid process spread somewhat rapidly upward over the forearm and shoulder of the same side. The involved parts were both tender and painful. Subsequently, flat, circumscribed lesions of a papulo-tubercular character, some as large as horse-chestnuts, developed in different parts of the body on both sides. There were six isolated, circumscribed, and well-developed lesions on the anterior face of the left forearm, in the lower half; six on the lower third of the right arm near the elbow; one on the upper posterior face of the right leg near the knee joint; and one on the right forearm. Ten of the lesions had been opened by his physician. All had contained pus.

During the progress of the disorder there had been a few chills, none of them severe; a subsequent fever had been of mild grade. Some of the swellings had been exquisitely painful.

When examined, his temperature was found to be normal. A circular ulcer with a granulating floor, softish base, and purulent secretion was recognized on the dorsum near the central portion of the back of the left hand. Its margins were not everted to any marked degree. The diameter of this ulcer measured nearly three centimetres. The pain previously experienced had been considerably mitigated by the treatment pursued (bichloride dressings and the administration internally of the iodide of potassium). All the palpable glands in the body were tumid and tender, those of the side chiefly affected somewhat more appreciably than the others.

The hand was dressed with a hot bichloride of mercury solution: the iodide of potassium was ordered to be continued. The patient was sent to the Presbyterian Hospital of Chicago, for more careful investigation, and there placed in isolation.

On December 4th, a few more enlarged glands were recognized

beneath the jaw; but the hand lesion, under the dressings applied, seemed to improve. The patient then developed a temperature of 102° F. The leucocyte count showed sixteen thousand.

Improvement followed rapidly and when the patient learned that he was not the victim of farey, it became extremely difficult to persuade him to remain in the hospital for further examination and study. He insisted on returning to his home and there, later, speedily recovered his health. In a letter received from him a few weeks afterward, he reported that he was practically well. In a later communication, dated February 15, 1910, written with a view to furnishing information respecting the condemned horses, he reported himself as completely relieved.

OTHER NORTH DAKOTA CASES OF SIMILAR CHARACTER.—In August, 1904, Dr. E. P. Quain, of Bismarck, N. D., published a report of six cases of patients infected with a peculiar disorder, all of whom were residents of the southern part of North Dakota, the precise district in which occurred the cases of sporotrichosis in man and horses described in the preceding pages. In a personal communication received by us on May 16, 1910, Dr. Quain writes that he and his colleagues have seen at least six similar cases since the date of his previous observations. These patients all gave a similar history, a history practically that of the recorded cases of French and American human subjects of sporotrichosis. All ages were represented. In each case the infection occurred through an invasion-atrium followed by lymphatic complications; in each, in about the course of three months, the axillary or other glands were involved; and in each the disease was cured only by radical incision and cauterization. Next to this method, X-ray treatment was found most effective. At the time of publication of these reports it was supposed that there had been a tuberculous origin of the disorder though tubercle bacilli were never found, even after examination of carefully selected specimens in the State Laboratory at Grand Forks. Dr. Quain now believes that these cases are in the category of those described in these pages and probably due to invasion by the sporothrix, though the organism has not yet been recognized. It is strikingly significant that this group of cases, both in man and animals, should have occurred in a district of the one State where evidence of the existence of sporotrichosis in other instances was unmistakable.

In connection with the cases referred to above, may be mentioned an instance of sporotrichosis which developed in Chicago in

a male patient shown by Dr. K. A. Zurawski at the Stockyards Branch of the Chicago Medical Society, in December, 1909. The following memorandum was furnished by the kindness of the physician named:

MEMORANDUM RELATING TO CASE OF SPOROTRICHOSIS.—“J. D., single, twenty-five, packer for express company; was referred on October 25, 1909, to a physician and gave a history as follows:

“Was always well; denies venereal history; a year and a half ago he began to notice some flat, deep, painless tumors which would grow, redden, and then burst, discharging thick, whitish pus, then healing in a few months. Lately, he noticed that he was not as well as before and that he was paler than usual.

“Examination discloses a strong physique in a well-developed man; nervous and muscular systems, lungs, and heart normal; no general ailment; legs in front and behind show large depressed scars, bluish-brown in color; on the calf of both legs can be seen and felt tumors, two of which are discharging thick viscous pus; other tumors are deep, indolent, and painless; one is reddish and has a roundish, softened, shallow spot in the centre; about the soft spot the skin is much harder than elsewhere. No signs or history of chancre. Pus removed by pipette from abscess and from softened gumma contains the sporotrichum which develops on Sabouraud medium.

“Treatment. K. I. in large doses (1, 0—4, 0) followed by healing in one month; some small gummata left; on discontinuing, they enlarge, and disappear on increase of dosage.”

Subjoined are: (a) Results of studies of the organism and of the tissue in which it was recognized in the first case herein reported.

(b) Results of experimental inoculation of the lower animals with the organism.

(c) Results of the study of an organism obtained from the Bureau of Animal Industry, Washington, D. C. (kindness of Dr. Mohler, Chief of Pathological Department). This organism, originally isolated from a horse suffering with mycotic lymphangitis in Pennsylvania, appears to be identical with the Sporotrichum Schenckii obtained from our human patient.

From the margin of the large primary lesion on the dorsum of the right hand of the human patient whose case is first described above, a few drops of tenacious glairy pus were obtained by making

a small puncture through the epidermis. Several cover slip smears were made with this pus and a portion of it was smeared on the surface of blood agar slants. Broth tubes were also inoculated and one loop was added to a tube of melted blood agar which was poured into a Petri dish. Two of the smaller lesions on the arm near the elbow were opened with a sterile instrument and a small amount of the bloody, purulent contents obtained, from which cultures and smears were likewise made. A blood culture was also taken. The smear preparations were stained with methylene blue and Gram's stain. A large number of polynuclear leucocytes, many showing advanced degenerative changes, was seen, but no bacteria or organisms of any kind were found after careful search.

The inoculated culture tubes and plates were incubated and observed from time to time. At the end of the third day a few small, grayish-white colonies were seen on the surface of the blood agar slants made from the material obtained from the large lesion on the hand and from the smaller ones on the arm. The blood agar plate remained sterile. In one broth tube a growth appeared, but this later became contaminated and was discarded. The blood culture gave a negative result. Smear preparations made from the colonies in the tubes showed a sporothrix in pure culture. Subcultures were then made and the organism was studied in detail.

MORPHOLOGY. As seen in the hanging drop from cultures several days old (Fig. 1) the organism consists of an abundant mycelium with oval or pear-shaped spores attached along the sides and at the ends by very fine pedicels. In the latter position frequently is a cluster, arranged in bouquet form, of several spores. The mycelium branches abundantly. Delicate septa are distinctly seen at irregular intervals along the filaments; and in the centre of the latter are often seen small refractive granules staining deeply with methylene blue. The wall of the filaments is distinctly refractive and the spores often present a double contour. The spores vary in shape and size, measuring $3\text{-}5\mu$ in length and $2\text{-}3\mu$ in width; the elongated or oblong forms may be considerably longer, but frequently are not as wide. The organism stains readily with the ordinary dyes and is not decolorized by Gram's stain. The spores are easily detached from the filaments by the slightest manipulation and consequently in the stained preparations it is uncommon to see them attached to the mycelium. Stained with methylene blue, the mycelial contents include granules, irregular in size, which stain

more deeply than the wall and other portions. The septa are clearly seen. The spores stain deeply and, as a rule, uniformly, though it is not uncommon to see near the apical end pale-staining areas resembling vacuoles. With Gram's stain the spores are also deeply stained and the mycelium less so. Many filaments may be completely destained by overwashing with alcohol. Dilute carbol-fuchsin readily stains the organisms and is very satisfactory for studying the detailed structure.

In young cultures, one to two days old, the germinating spores may be seen in large numbers. At one side of the spore, a bulging of the wall occurs marking the site of the growing filament, which continues to extend rapidly and soon gives off branches. Filaments often originate on opposite sides of the spore; again the two filaments appear to originate close together on the same side. Soon new spores begin to form at the sides and tips of the branching mycelium; as a rule, they are not numerous at the end of twenty-four hours, but in forty-eight hours they are abundant. The branches are given off nearly at right angles to the main filament.

CULTURAL CHARACTERISTICS. The organism grows well on ordinary media, though its growth is more profuse on media containing sugar. Blood agar, which was used largely in this case, is also a very satisfactory medium. The fungus grows as well at room temperature as in the incubator and is strictly aërobic. The cultures are odorless.

BLOOD AGAR SLANTS (Fig. 2). At the end of twenty-four hours the growth is very scant, though distinctly perceptible as a delicate, pale grey layer. This increases from day to day, becoming profuse after several days: it is raised above the surface and also grows downward a short distance into the medium. After several days there may be seen with the naked eye a very delicate fringe consisting of fine radiating lines projecting at right angles from the margin of the growth. With the low power of the microscope these lines, which are the branching filaments extending outward into the surrounding medium, may be seen in twenty-four hours after inoculation and, as this appearance is quite characteristic of this organism, it may be used for diagnostic purposes. It is observed especially well at the top of the slant, at which point the medium is thin and allows the growth on the surface to be distinctly seen. After ten or twelve days the surface of the growth becomes corrugated and the radiations at the margin become more prominent.

BLOOD AGAR PLATES. The colonies appear about the second day and slowly increase in size; they may be seen with the microscope in twenty-four hours. No haemolysis occurs. The colonies are pale grey or nearly white and at the margin is a delicate fringe consisting of fine radiating lines. Plates are not suitable for continued growth on account of the rapid drying of the media.

AGAR SLANTS. In plain agar and glucose agar slants, the growth is much alike except that it is much more profuse in the latter. It closely resembles the growth on blood agar described above.

STAB CULTURES (Fig. 3). In glucose stab cultures, the growth is visible near the surface in forty-eight to seventy-two hours. After a few days the delicate pale growth spreads gradually on the surface around the needle puncture, the numerous fine radial striations becoming clearly visible at the margin. The growth becomes distinctly elevated, at times two or more millimetres above the media, and its surface about the twelfth day becomes irregular and corrugated. About the third week there may develop on glucose media¹ a dark-brown or almost black pigmentation on the surface. The growth along the needle track is profuse near the surface and quite rapidly becomes less abundant, so that near the bottom of the tube little or none occurs. It extends at right angles to the needle puncture and consists of fine lines, at times broken into small granules. The medium becomes translucent and after three or four weeks may be tinged a delicate brown. Gas does not form. In plain agar the stab culture is similar to the above, but growth is less profuse.

BROTH. In glucose broth after a few days, a white flaky growth appears at the bottom of the tube. The small masses or clumps tend to remain separated and, on agitating the tube, may be broken into very fine particles which again soon settle, leaving the medium clear above. In plain broth the growth resembles that in glucose broth, but is less abundant.

POTATO. The growth at first is delicate and nearly white; later it becomes more profuse and may be tinged a delicate brown.

LITMUS MILK. The growth after a number of days settles to the bottom in the form of a sediment. No change occurs in the media.

GELATIN. The growth soon begins near the surface and may be seen as fine radiating lines along the needle puncture, similar

¹This pigment was not noted on blood or plain media.

to the growth in agar stab cultures. Liquefaction begins in from one to two weeks and slowly extends downward. Later, there is often seen on the surface a thick, white, mat-like mass which may be easily broken.

ANIMAL EXPERIMENTS. On December 10th, two white mice were inoculated in the tail with a small amount of a dense suspension of our sporothrix from a pure growth of blood agar. The inoculation was made by placing a drop on the skin and then scarifying; also by injecting some of the suspension beneath the skin with a fine needle. After several days scarcely a trace of the scarification remained. On December 27th, in one mouse a small abscess containing a drop of viscid pus was found at the point of inoculation and the skin about it was reddened. A few days later the abscess came to the surface and gradually spread. Near the root of the tail, later, an ulcer formed which gradually spread up the back of the animal. The margin of the ulcer was raised, red, and the centre covered by a dry crust under which was abundant granulation tissue. From the margin a small quantity of pus was expressed, smears of which showed a large number of small, elongated and oval bodies characteristic of sporothrix as it occurs in tissues. (See figure). Many leucocytes were also present, none of which was engaged in phagocytosis. In cultures a nearly pure growth of sporothrix was obtained which in every respect was identical with the organism inoculated. The lesion was chronic, slowly increased in size, and the animal became gradually emaciated and died February 20th, over two months after its inoculation. At the time of death, the lesion covered the entire lower portion of the back, was over one centimetre wide, and involved the muscles down to the vertebrae. A small nodule, which appeared one or two weeks before death on the right hind leg, came to the surface and formed a small ulcer not unlike the primary lesion.

In the second mouse, a lesion formed shortly after inoculation which was similar in character to the lesion in the first mouse, but which did not progress as rapidly. It attained a diameter of about five millimetres after one month's time, then healing slowly took place but was not complete until nearly three months later.

A white rat was inoculated in the muscles of the abdominal wall with an emulsion of sporothrix six days old. One week later, in the wall at the site of inoculation, a small nodule, the size of a pea, was palpable which slowly became larger. Two weeks later

the animal died from some unknown cause. On examination two small abscesses were found in the abdominal wall containing a purulent substance; and near one there was a diffuse infiltration, greyish-yellow in color, and about one square centimetre in area, just under the peritoneum. In smears obtained from the abscesses and from the infiltrated area, were many typical sporothrix organisms which also developed in cultures. The heart's blood was sterile and there was no evidence of involvement of the peritoneal cavity or other organs.

A second white rat was inoculated directly in the peritoneum. The animal a few days later, became less active, gradually lost in weight, and died twenty-five days after the inoculation. No lesions of the skin developed. Small, soft, yellowish-grey nodules were found in the omentum and about the liver, and in many places the peritoneum was thickened, rough, and greyish white. Smears made from the nodular contents and from the involved peritoneal surface showed many oval and elongated sporothrix bodies, and cultures made of this material gave pure growth of sporothrix as did also the heart's blood. The testicles were slightly enlarged and involved in a mass of greyish-yellow, soft, granulating tissue.

On February 5, 1910, a monkey (*Macacus rhesus*) was inoculated subcutaneously on the forehead and on each forearm with approximately 1 cc. of dense suspension of sporothrix culture ten days old. One week later distinct swelling occurred at the points of inoculation which gradually increased in size. At the end of two weeks, on the forehead, was a large subcutaneous fluctuating abscess (Fig. 4) nearly of the size of a walnut. The skin over it was tense, slightly reddened, but intact. Several drops of grey tenacious pus were aspirated by means of a needle. On microscopic examination many pus cells were visible and among them were numerous, typical, oval and elongated sporothrix forms such as are seen in tissues. Cultures gave a pure growth of sporothrix. At the sites of inoculation on the arms, smaller abscesses formed about the same time and here there was considerable infiltration about the needle punctures with less accumulation of pus. After about the third week, the lesions slowly decreased in size, the contents of the abscesses being absorbed and replaced by a firm indurated subcutaneous mass, which at the end of eight weeks had practically disappeared. No secondary lesions appeared.

On April 16th the same animal was again inoculated with a

dense suspension of sporothrix under the skin at a point just over the right eye. After one week a distinct swelling was observed at the site of inoculation which rapidly increased in size and came to the surface after fifteen days, at two points discharging a considerable quantity of thick, grey, tenacious pus (Figs. 5 and 6). The lesion then became smaller, the ulceration rapidly healed, and three weeks later only a small mass of indurated subcutaneous tissue remained. No secondary lesions appeared.

HISTOLOGY. A small piece of tissue was excised from the margin of the large ulcer on the dorsum of the patient's hand. Paraffin sections of this tissue were made and stained with haematoxylin and cosine and by Gram's method. The tissue included the epidermis and the subjacent infiltrated tissue. The epidermis was thickened and columns of epithelial cells, projecting into the underlying tissue, were common, and in places showed whorls of flattened cells, the centres of which were composed of degenerated epithelium. Beneath the epithelium the tissue was thoroughly infiltrated with cells, most of which were round cells and polynuclear leucocytes. Plasma cells were not uncommon and here and there were found typical giant cells of the Langhans type with nuclei, as a rule, arranged at the periphery. Epithelioid cells were common, but a definite tubercle arrangement was not evident. Young blood vessels were commonly found.

A very careful search of the sections, especially those stained by Gram's method, failed to reveal sporothrix organisms. They were not present in or about the giant cells where they are at times found in considerable numbers; neither were they seen in parts infiltrated with leucocytes. This is not surprising in view of the fact that in smear preparations of the pus first obtained from this lesion, they could not be found and the cultures gave only a small number of colonies.

In sections of tissue removed from the infected animals enormous numbers of the sporothrix organisms could easily be found in the Gram-stained preparations. Sections through the thickened peritoneum of the infected rats described above show large numbers of the oval and oblong forms. Further, the testicle contains much infiltration, and here and there are giant cells, in and about which myriads of organisms may be seen. They are not found generally distributed in the other viscera. Filaments were never seen in the

lesions. The predominant form is oblong, being about $10\text{-}12\mu$ long and $1\text{-}3\mu$ broad. Typical, oval or pear-shaped bodies, such as are seen in cultures, are also frequent. It is common to see the oblong bodies arranged radially in groups of six or eight about a central oval or more irregular form, and at times there is present a delicate connecting pedicle. This stellar form may also be seen in artificial cultures and reminds one somewhat of the ray forms of actinomycosis, but they are much smaller and less complex. Definite budding forms in the tissues are not uncommon and are best shown in smear preparations of pus (see figure). The buds appear at the ends of the oblong tissue forms and sometimes remain attached, forming chains consisting of several individuals. About the oval or pear-shaped spores the buds may arise apparently at any point on the surface, thereby giving rise to stellar structures like those above described.

These studies, therefore, of the morphology, culture and pathogenic properties of the organisms isolated from the case detailed above, agree in every respect with the descriptions given by Schenck, who in 1898 first described this organism and demonstrated its pathogenic properties; and also those given by Hektoen and Perkins, who in 1900 confirmed Schenck's results and definitely named the organism, *Sporotrichum Schenckii*.

ORGANISM OBTAINED FROM HORSES. The organism obtained from Dr. Mohler and originally isolated from mycotic lymphangitic lesions in the horse, was carefully compared with our sporothrix morphologically; also by growing the two organisms side by side on various media and by comparable animal inoculations (Figs. 7 and 8).

Morphologically no noteworthy differences could be detected. In some cultures our organism appeared to be slightly smaller, but this difference was not constant. In tissues, too, the forms are practically alike in size and appearance. This similarity is well brought out in Figures 9 and 10, which are photomicrographs (1000x) of the two organisms each prepared from the pus obtained from the lesions of inoculated mice. In both not only are the forms alike, but each shows in a characteristic manner the budding forms.

Culturally the two organisms appear alike on various media. They produce the profuse growth on blood agar with the fine radiating lines at the margins of the colonies and later the corrugated

surface appears. Both liquefy gelatin at approximately the same rate.

Rats and mice were inoculated with the organisms from the horse and the resulting lesions, which were fatal, were in every respect comparable to those obtained with our sporothrix already described. From those lesions the organism was recovered in smears and cultures (Figs. 11 and 12).

REVIEW OF HUMAN CASES IN LITERATURE. The first contribution to the subject of sporotrichosis in man was made by Schenck, his observations having been published in the *Bulletin of Johns Hopkins Hospital* in the year 1898. His report is entitled "Refractory Subcutaneous Abscesses Caused by a Fungus Probably Related to the Sporothrix" (Fig. 13). Brayton's case reported in the year 1899 is now generally catalogued in the same class, though the sporothrix was not recognized. Hektoen and Perkins, in the year 1900 (*Journal of the Boston Society of Medical Sciences*), reported a third case in which the organism was discovered and given the name which, on the ground of priority of observation, should be retained, viz., the *Sporotrichum Schenckii*. The first communication on the subject in France was made by de Beurmann and Ramond, in the year 1903, who have ventured to make the questionable statement that this was the "first case of disseminated gummatous sporotrichosis discovered," though they were well acquainted with the dates of the American publications on the same subject. As a result of repeated declarations, the name of de Beurmann on the continent of Europe has been identified with sporotrichosis in man. It has been sought to justify this position by claiming that the type of the disease recognized by the American authors, as also by Dor in the year 1906, differed from that seen by de Beurmann and his colleagues in France. There can be, however, no doubt that, in the world of science which has always done ample justice to the pioneers in every field of investigation, the credit will in the end be given where it rightly belongs.

Surveying the extensive literature which has now accumulated on the subject of sporotrichosis and which is but imperfectly catalogued in the appended bibliography, it becomes apparent that more than one hundred cases of the disease in man have been recognized; and further, that the clinical history, objective symptoms, and results of experimentation, both by cultural methods and by transmission of the organism recognized as effective, to the lower

animals, have been singularly alike. Few investigations by different observers in different parts of the world, relating to one subject, have pursued lines in such parallel directions and with such extremely similar results. One report is so nearly the replica of another that there is a monotonous sameness revealed in all. By far the larger number of these cases have been observed in France. De Beurmann lately suggested that instances of sporotrichosis in his country were now so numerous and so frequently encountered that an experience in such cases was becoming commonplace ("banal"). For that reason, it is suggested that many cases, especially those more recently encountered, have not been recorded in medical literature.

Viewing this large experience (of cases both in France and elsewhere) certain data are available of a fairly conclusive character. Somewhat more than twice as many men are infected as women, a fact probably to be accounted for by the more frequent exposures to the sources of the disease among the one sex than among the other. The ages of patients range from the middle of the third decade to the sixth, the eldest of the patients whose age is recorded being sixty-six; the youngest, twenty-five. The average of all is somewhat more than forty-five.

The occupations of those attacked include a wide range of labor: among the male patients there were clerks, peddlers, iron and nickel-plate workers, farmers, draymen, packers, florists, waiters, cooks, stablemen, and railway employes. Among the women there were laundresses, domestic servants, and a few housewives.

The site of the primary inoculation ("chancre" of French writers) points conclusively to the general mode of invasion of the disease. Naturally, the parts most often and earliest affected, are the hand and forearm—the hand cases including primary lesions of the index fingers, both on the right and left side. Of three cases where the face was first attacked, the infection resulted from a trauma of the jaw, lower lid, or forehead. Next in order follow the thigh, the leg, the foot, and the shoulder with, lastly, scattering cases where the first evidences of the invasion were visible over the abdomen, the elbow, the knee, the conjunctiva, and the vulva.

After infection and subsequent to the production of the initial lesion, the symptoms of the disease are singularly uniform. The so-called gummata of the skin and subcutaneous tissue are commonly multiple, often as many as three-score in one subject, ranged

in general along the line of the lymphatics, at times in association with a distinctly developed lymphangitis. In many cases there is coincident adenopathy of one or several of the glands, either only on the side which was the original site of infection or declared elsewhere and even generalized. Other organs than the skin attacked have been, in exceptional cases, the mucous membranes, the muscles, the joints and periarticular tissues, the bones, the testes, and the spinal marrow. Coincident diseases noted in cases have been widely diverse. Some of the patients were subjects of chronic alcoholism; and some had syphilis, tuberculosis, diabetes, or nephritis. While the most of the French patients recovered promptly after the administration of the iodine salts in connection with vigorous anti-septic treatment of the local lesions, some have perished, these for the most part, as a consequence of the complicating disorders present at the time of infection or subsequently evolved. Attacks of erysipelas complicated a few cases; some of the infected subjects suffered from enormous abscesses. In a few instances resorption of the pathological product has occurred in the lesions. In yet others, fistulous sinuses have formed, communicating with a deep abscess. The scars left when the morbid process is at an end may be smooth, mamelonated, linear, or ovoid. They are often pigmented.

The period of incubation of the disease in human subjects extends somewhat uniformly between the sixth and twelfth day, the most developing seven days after invasion. The culture media employed for the fungus recognized, have been agar, glucose agar, blood serum, milk, potato, carrots, bouillon, gelatin, wort agar, and very frequently in France, Sabouraud's formula. We have used blood agar with good results. The organism is readily destroyed at a temperature of about 60° C.

Among the lower animals to which the sporothrix has been successfully transmitted may be named: grey and white rats and mice, dogs, guinea pigs, and fowls. The pigeon, the rabbit, and the guinea pig seem less susceptible than others. We have succeeded, as appears elsewhere in these pages, in transmitting the disease to a Rhesus monkey.

Widal and Abrami (*Ann. de l'Inst. Pasteur*, Jan., 1910, xxiv., No. 1, p. 1) investigating the subject of sero-diagnosis in sporotrichosis show that in mycotic invasion of the body, both in man and animals, serum diagnosis under certain limitations is as well established as in bacterial infection.

Spore suspensions are prepared from cultures six weeks to three months old by filtering away the mycelium. Such suspensions are readily agglutinated by the serum of patients suffering with sporotrichosis in dilutions as high as 1/400 and 1/800 and even at times 1/1500. The phenomenon of complement fixation also may be obtained in these cases by using the spore suspension as antigen. Tests were also made in cases of infection with other fungi and from a study of such specific serum reactions one of the most interesting of the conclusions reached is, first, the demonstration that sporotrichosis is in a group-relation with actinomycosis and parasitic stomatitis (thrush); while, second, these are in no way correlated with the separate group including the trichophyton, the aspergillus, and the achorion of Schoenlein.

RELATION OF THE ORGANISM FOUND IN MAN WITH THAT FOUND IN HORSES. A question of special interest and considerable practical importance relates to the probable source of the disease in the patient whose history has been detailed in these pages. Is it possible that the sporotrichosis of the man originated in the "epizoötic" disorder affecting the animals on the farm adjacent to his own, the patient admittedly having visited the premises of this neighbor, and having probably come into contact with the diseased horses or with the mould from which these last were possibly infected?

On the one hand stands the report of the veterinary surgeons, to whose decisions in the case of the diseased animals just weight should be attached, both because of the character of the symptoms detailed by them, symptoms undoubtedly pointing to the existence of glanders, and also by reason of the admitted skill and experience of these officials.

On the other hand, it is admitted that the bacillus of glanders was not sought for nor discovered in the horses that were killed. It is significant that these animals had suffered for a large part of the season preceding the month of November when the State inspection was ordered. This would, for some of the animals attacked, negative the proposition that all of them had been the victims of acute glanders; while the chronic form, though known to be in cases eventually destructive of animal life, may present symptoms which, admittedly, resemble a disease wholly different both in its nature and career.

Under the titles, African lymphangitis, suppurating lymphangitis, ulcerative lymphangitis, lymphangitis epizoötica, benign

farcy, *farcin curable*, *farcin de rivière*, Japanese farcy, pseudo-farcy, equine pox, inundation fever, and equine syphilis, an affection, chiefly of horses, has long been recognized by veterinarians as distinct from true glanders. There is practical agreement respecting the morbid phenomena recognized in horses. In most of the subjects of the disease, often after an invasion-atrium produced by trauma, there has occurred, after an incubative period lasting from three to twelve weeks, lachrymation, corded lymphatic vessels, enlarged glands, and numerous isolated, tumor-like swellings, some hard and some soft to the touch, furnishing a sero-sanguinolent pus, often breaking down into ulcers. In many cases there has been perforation of the septum nasi. When, as often occurred, one extremity was chiefly involved, there has been elephantiasic enlargement of the entire limb affected. It is noticeable that in most of the reports the systemic symptoms were slight, though at times a febrile movement was recognized. None of the animals subjected to the mallein test showed evidence of true glanders. The post-mortem findings were limited practically to lung abscesses.

According to Pallin, whose valuable treatise on this subject sets forth clearly the dates of the history of the affection, the first clear distinction between the two affections was made by Chénier in the year 1881. Three years after, Rivolta and Micelloni described with precision the distinction between the two affections; and recognized in pus obtained from the gummata of mycotic lymphangitis, a special organism which they named cryptococcus; and they identified the disease in which it occurred as that first differentiated by Chénier. Tokishige, however, in the year 1893, first declared the organism found in the pseudo-farcy of Japanese horses to be a species of saccharomyces; and Marcone, corroborating Tokishige's observations, proposed to name pseudo-farcy, *saccharomycosis farciminosus*. Other writers on veterinary medicine assign the organism to the group of the coccidia; Piana and Galli-Vallerio to the sporozoa; and Formi and Aruch to the blastomycetes.*

Records of the transmission of this disease to man from horses are few. Runciman cites the case of three stablemen infected after

* The authors were unable to secure a copy of Carougeau's paper (see bibliography) until after completion of this work. A somewhat careful scrutiny of the results of his studies furnishes conclusive proof that in his observation of mules in Madagascar affected with mycotic lymphangitis, the author clearly recognized the distinction between those suffering from sporotrichosis due to an organism which he termed *Sporotrichum equi*, and the several forms of epizoötic lymphangitis of horses.

handling diseased horses, one of whom suffered from abscesses upon the arms. Pallin reports the case of a man who inoculated himself in the arm in the year 1899, in Bengalore, India. Multiple buboes developed along the course of the lymphatics as high as the axilla. After a somewhat severe illness the man recovered. Raspail and Dalous report the case of a French patient, a drayman, fifty-eight years of age, who was bitten by a horse on the left forearm and developed a typical case of sporotrichosis as a result. The condition of the horse is not described; nor does it seem to have occurred to these or any other French authors that there was any transmissibility to man of the equine disorder.

It is apparent, even on a cursory survey of the clinical records of these cases, that in general the symptoms in infected horses are not only singularly alike in all the reported instances—a fact well illustrated in the drawings accompanying several of these reports—but also that the symptomatology and course of the disease in these animals strikingly resemble those of sporotrichosis in man.

The possibility that the Dakota horses were suffering from mycotic lymphangitis is suggested by the facts in the case. In a personal communication made by Dr. Kinney, who ordered the destruction of these horses, he admits that the two affections, true and spurious glanders, strongly resemble each other; that he has recognized spurious farcy in cases submitted to him since the date of the occurrence detailed above: further, that the accepted and crucial mallein test, in this special instance, was not made. Dr. Crewe, the State Veterinarian, who despatched Dr. Kinney on this mission, makes a similar statement. Further, from the Second Annual Report of the Live Stock Sanitary Board to the Governor of Dakota, published in 1908 (Fig. 14), it appears that mycotic lymphangitis in horses actually existed in that State, the Report containing two illustrations of this disease, in which lesions upon the legs of the horses present a suggestive resemblance to those generally observed in sporotrichosis in man. In this report the malady is described as contagious, resulting from infection through the avenue of a trauma-atrium and due to a yeast-like fungus named "*Saccharomyces farciminosus*." Reference is also made to the Pennsylvania cases, observed in 1907; and also to studies by Dr. Mohler, Chief of the Bureau of Animal Industry, Pathological Division, who recognized two cases of pseudo-farcy among five horses isolated and submitted to them for bacteriological examination.

Dr. Langdon Frothingham, of the Harvard Medical School, at a meeting of the pathologists and bacteriologists of Boston, in the month of April, 1909, presented a preliminary report on a sporothrix obtained from two of five horses in Butler, western Pennsylvania, suffering from "epizoötic lymphangitis" which, according to the author named is "very often taken for glanders."

The cultures made by these observers have been under observation for two years and the organism under cultivation appears to be identical with that discovered in the case of our patient, an inoculated tube obtained from our laboratory having been sent to Boston for the purpose of comparison. Drs. Frothingham and Page have inoculated a horse and some of the smaller animals with the organism obtained from us, and the results, when sufficient time has elapsed for its reproduction and identification, will be especially interesting as bearing upon the question at issue. Their original culture has been tried on two horses with the result of producing characteristic lesions of epizoötic lymphangitis.

As already stated, through the kindness of Dr. Mohler, of the Bureau of Animal Industry in Washington, we have received cultures of the organism obtained by them from the cases of mycotic lymphangitis in horses occurring in Butler, Pennsylvania, and a comparison of the organism furnished by them with that obtained from our patient discloses no appreciable difference between the two.

Briefly, the organism obtained from the Pennsylvania horses has been recognized by the Harvard investigators as identical with that furnished them by us and obtained from our human patient; that which was forwarded to us from the Bureau of Animal Industry, also obtained from the Pennsylvania animals, has been recognized by us as identical with that furnished by our Dakota patient, alike in its structural characteristics and in the clinical symptoms produced when transmitted to the lower animals; and, finally, the Bureau of Animal Industry in Washington gives us the assurance that the Dakota organism obtained from horses in that State suffering from mycotic lymphangitis, is identical with that obtained two years ago from the horses similarly affected in Pennsylvania.

It remains to enquire whether the organism occurring in the cases under consideration in both man and horses in this country, which is clearly a sporothrix, is identical with, or has any relation with, that described by Tokishige as *Saccharomyces farciminosus*.

Even on cursory examination it is clear that no relation between

them can be recognized. Tokishige's organism is described by him as constituted of "peculiar cell-like bodies easily demonstrated in all liquid and solid products of the disease, ovoid in shape, 3.7 to 4 μ in length and 2.4 to 3.6 μ in breadth, having a thick double-contoured membrane and homogeneous contents with pointed poles and bud-like addition of two or three cells united at their poles, resembling yeast cells with either uniformly translucent contents or with a strongly refractive coccus-like nucleus—pale or light-yellowish in color." Tokishige induced symptoms in the lower animals infected with pure cultures of these bodies (horses, guinea pigs, etc.), but it is not stated that the organism was recovered from the animals thus treated.

The preceding description is fairly accurate of *saccharomyces* in general, and justifies amply the name which the author employs. The organism corresponds closely with the *blastomyces* frequently recognized by us in man, including the budding of the double-contoured bodies, and the peculiar appearance of the centre of each called the vacuole.

Through the kindness of Dr. Mohler, we have been able to photograph an organism strongly resembling the *Saccharomyces farciminosus* described by Tokishige. It occurred as an intrusion on the udder of a mare affected with that form of trypanosomiasis known as *dourine* (Fig. 15). The resemblance to the organism described by Tokishige as effective in mycotic lymphangitis is obvious, and demonstrates that the *Saccharomyces farciminosus* is widely different in its botanical reations from any form of sporothrix thus far recognized, either in the lower animals or in man.

It remains to ask why Tokishige and the other writers on mycotic lymphangitis of horses in Europe, Asia, and Africa neglected to discover the sporothrix if it were indeed the effective agent. Was it for the reason that the sporothrix was present in their cases and not recognized? Was it possible that the *saccharomyces* recognized and properly named by them was an intrusive and not an aetiological element in the cases under their observation? Or is it possible that in all countries, even though the clinical symptoms of mycotic lymphangitis in horses be in all so remarkably similar, two or more different types of that disease exist, one produced by the sporothrix and another by the *saccharomyces*? This last is the more probable explanation of the apparent diversity. It is an opinion formulated by Carougeau and shared by ourselves. Dr. Mohler, not making positive statements on this point, informs

us that the name given by him to the organism kindly sent to us (*Saccharomyces farciminosus*) was merely accepted by him as probably accurate, but not demonstrated to be correct in the laboratory of the Bureau.

In connection with the consideration of the relation of sporotrichosis in man to mycotic lymphangitis in the horse, mention should be made of the fact that spontaneous sporotrichosis has been observed in rats in South America and in the dog in France. In South America, Lutz and Splendore have studied the disease thoroughly, observing its frequent occurrence in rats and reporting five cases in man in the same locality. The disease is transmitted in rats through bite wounds usually on the extremities or tail, and following the initial lesion a generalized infection may result. The cases in man presented the typical symptoms of sporotrichosis as observed in other countries. Transmission from the rat while probable was not demonstrated. A careful study of the organism was made and in every detail, according to their description, it corresponds with our organism, morphologically, culturally, and in its pathogenic properties. It is interesting to note that these studies were made independently, the work of other investigators not being known to these authors until later. Furthermore, the organism from these South American cases has been identified in France with the *sporothrix* described there by de Beurmann and others, and it is without question identical with our *Sporothrix Schenckii*.

Gougerot and Caraveu, in France, have observed spontaneous occurrence of the disease in the dog. It is not at all improbable that further study will show that the disease is still more widely disseminated among animals, seeing that such a large number of different species are susceptible to experimental inoculation.

CONCLUSIONS. 1. The type of the dozen or more instances of sporotrichosis in man observed in America, practically corresponds with that occurring in France and elsewhere on the continent of Europe. These instances are due to the presence of the organism first described by Schenck and properly named by Hektoen, the *Sporotrichum Schenckii*.

2. Some of the American cases of mycotic lymphangitis, or epizoötic lymphangitis, in horses are due to the presence of the *Sporotrichum Schenckii* and should be described as instances of sporotrichosis. The history of the human patient here reported

PLATE XXXVI.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.

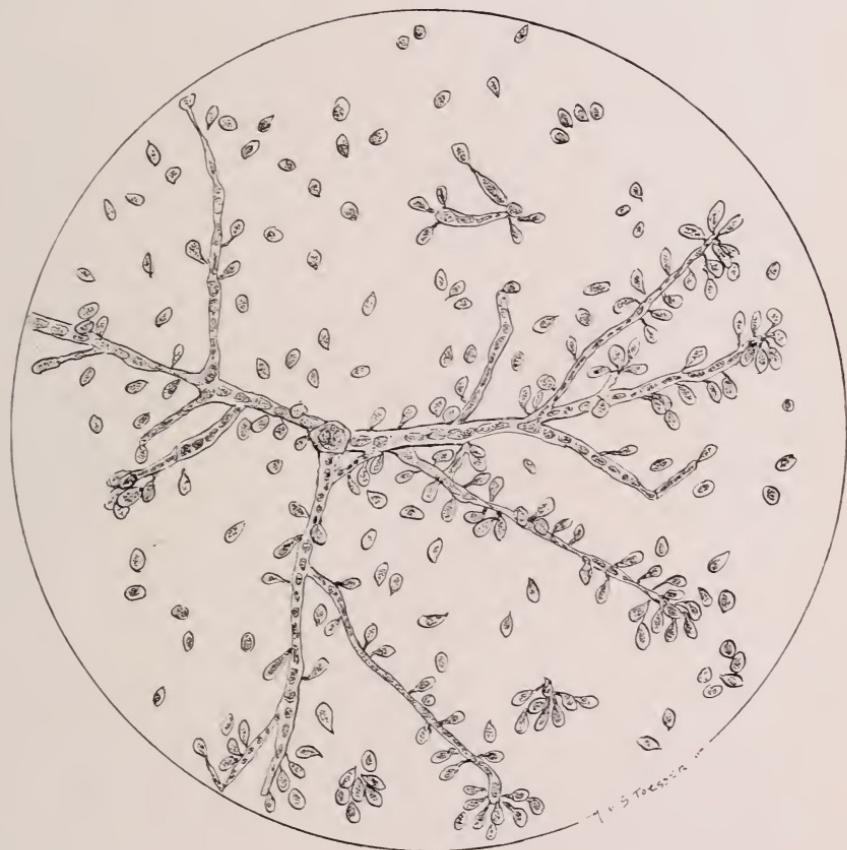


FIG. 1.—*Sporothrix Schenckii*. Hanging drop preparation, showing mycelium and spore formation. Culture 4 days old. Human.

PLATE XXXVIII.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.



Fig. 2.

Sporothrix Schenckii.
Culture on blood agar slant.
12 days old.
Human.



Fig. 3.

Sporothrix Schenckii.
Stab culture on glucose
agar. 12 days old.
Human.

PLATE XXXVIII.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.



FIG. 4.—Rhesus monkey: lesions of forehead produced by inoculation with sporothrix.

PLATE XXXIX.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.



FIG. 5.—Rhesus monkey: lesions of brow following inoculation with sporothrix.

PLATE XL.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.



FIG. 6.—Rhesus monkey: lesions following inoculation with sporothrix.

PLATE XLI.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.



FIG. 7.—*Sporothrix Schenckii*. Gram's stain of artificial culture. (Human.)



FIG. 8.—*Sporothrix Schenckii* from cultures furnished by the Bureau of Animal Industry, Washington, D. C., originally obtained from horses affected with mycotic lymphangitis in Butler, Pennsylvania.
(Labelled "Saccharomyces farciminosus.")

PLATE XLII.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.



FIG. 9.—*Sporothrix Schenckii*. Smear preparation obtained from mouse abscess, showing budding tissue forms. Original culture isolated from man.

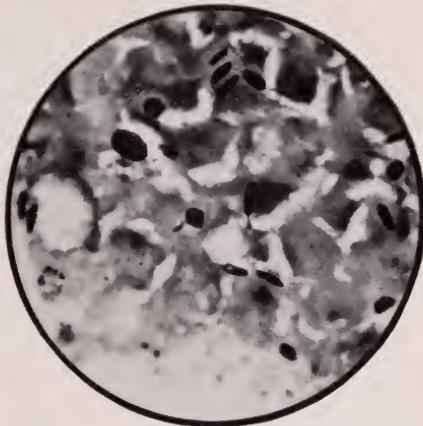


FIG. 10.—Smear preparation from mouse showing budding forms. Organism originally isolated from lesions of epizoötic lymphangitis in the horse sent by Dr. Mohler of the Bureau of Animal Industry, Washington, D. C.



FIG. 11.—White rat inoculated with sporothrix from Butler horses, showing lesions upon the tail. (So-called "Saccharomyces farciminosus.")

PLATE XLIII—To Illustrate Article by DR. JAMES NEVINS HYDE and DR. D. J. DAVIS.



Fig. 12.

Blood agar slant.
sporothrix from Butler horses.
(Supposed to be "Saccharomyces
farciminosus.")

PLATE XLIV.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.



FIG. 13.—Sporotrichosis: lesions of arm in Schenck-Hektoen patient.



FIG. 14.—Mycotic lymphangitis in a North Dakota mare. (From the 25th Annual Report of the Bureau of Animal Industry, p. 231, 1910).

PLATE XLV.—To Illustrate Article by DR. JAMES NEVINS HYDE and
DR. D. J. DAVIS.

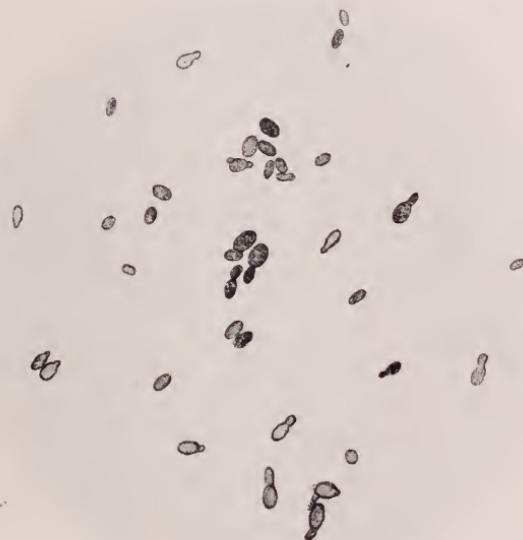


FIG. 15.—*Saccharomyces* from the udder of a mare affected with Dourine.
(Bureau of Animal Industry.)

lends support to the probability that the disease was derived from a similar affection in the horse, a probability emphasized by the records of five previously reported cases in which men suffered who had been in contact with these animals. The sporothrix, however, is a mould not very rarely encountered; and may be found in the vicinity of barnyards and untilled fields near out-houses. The possibility that both man and horse may be equally infected from the same source is not to be overlooked. There is reason to believe that the growth of this mould is more active and abundant in certain parts of the country than in others, with a resulting larger opportunity in such localities for the infection of both man and lower animals.

3. The disease in horses and mules, of occurrence in Europe, Asia, and Africa, recognized in veterinary medicine under the titles of mycotic lymphangitis, epizoötic lymphangitis, *farcin de rivière*, *farcin bénin*, Japanese farcy, African farcy, etc., and described by Tokishige as due to the presence of the *Saccharomyces farciminosus*, while clinically resembling the American cases recorded under the same title, with the knowledge at hand, cannot be demonstrated as identical with pseudo-fancy observed in this country. The organism as described by Tokishige and others does not agree in detail with the *Sporotrichum Schenckii*. It is possible that two types of the disease in animals occur in foreign countries; one identical with the American affection; the other of the order of *Saccharomyces* or *Blastomyces*.

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DISCUSSION.

DR. CALVIN G. PAGE said the paper of Drs. Hyde and Davis was of interest not only from a veterinary point of view, but from the stand-point of human beings, as this disease had been mistaken for both syphilis and tuberculosis. The speaker showed two or three cultures he had made from the organism sent to him by Dr. Hyde, as well as some lantern slides. He also showed a drawing of its appearance under the microscope and a specimen showing a mouse infection. A similar or-

ganism had been obtained from the horses that had been affected at Butler, Pa., and similar cases had been reported from North Dakota, Kansas and southern California. The affection had been traced to a species of mould growing out of doors, which infected the horses. It had also been found in the common rat, which was the most satisfactory animal for experimental inoculation. For culture purposes, potato was very satisfactory. The pus from one of these lesions should be freely smeared over the cut potato, and the culture would begin to grow in a few days at the ordinary room temperature.

Dr. Page said there had been some discussion from the veterinary side in regard to the disease called epizoötic lymphangitis, and he thought that at least some of the cases reported under that name were really cases of sporotrichosis. In the diagnosis of this affection, the agglutination reaction was of importance as it rendered the recognition of the disease possible after the abscesses had healed, or in cases where it was not possible to obtain pus. Probably many cases had occurred in this country that had gone unrecognized.

In addition to the cutaneous manifestations in sporotrichosis, Dr. Page said we might have a general infection. The bones and internal organs might become affected, although the more common type of the disease was that described by Dr. Hyde, consisting of the formation of subcutaneous nodules which later went on to suppuration. The disease might assume various clinical forms, which was a good reason why it should receive further careful study.

DR. JOHN REICHEL said that early in 1907, the attention of the State Veterinarian, the late Dr. Leonard Pearson, had been called to several cases of suspected glanders in and around Butler County, Pa. After a careful study of these cases, the clinical diagnosis of epizoötic lymphangitis was made by him and the diagnosis was later confirmed in the laboratory of the Pennsylvania State Livestock Sanitary Board, by the isolation of an organism from the pus of several cases which was recognized as the *Saccharomyces farciminosus*. Since that time, in connection with the control work of infectious diseases of the State Livestock Sanitary Board of Pennsylvania, not less than 200 cases had come before the notice of this Board, and autopsies had been performed on no less than 75. Two cases of suspected infection in man, supposed to have occurred through the handling of horses with epizoötic lymphangitis, were investigated and both proven to be negative. Dr. Reichel said that he was almost certain that the same cases from which Drs. Frothingham and Page had isolated their cultures had been also studied by him. No less than eight strains of the same organism had been isolated from cases of epizoötic lymphangitis, and in the study of these cultures he was convinced that the organisms were a form of *saccharomyces*. From the opportunity that he had had to examine the drawings of the cultures isolated by Drs. Frothingham and Page, and of the culture shown by

Dr. Hyde, Dr. Reichel was almost convinced that the organisms isolated by the latter and by Drs. Frothingham and Page were identical.

DR. H. W. STELWAGON said that about a year ago he had seen a case that presented all the symptoms of sporotrichosis. After an injury to the finger, a small nodule developed, followed by a chain of subcutaneous nodules and abscesses along the line of the lymphatics. Clinically, the picture was typical of the four or five cases that were now on record in American literature. Unfortunately, however, the pathologist failed to corroborate the diagnosis by finding the organism, but the speaker said he was convinced that it was a typical example of sporotrichosis; recovery slowly and gradually ensued under the administration of potassium iodide. Cases of this affection, Dr. Stelwagon thought, perhaps limited to one or two cold abscess-like formations, were probably not as uncommon as had been believed, as cases (the syphilitic type of French authors) heretofore looked upon as syphilitic gummata because they cleared up under the use of potassium iodide, might possibly have been examples of this disease.

DR. WILLIAM A. PUSEY said he had had an experience similar to that of Dr. Stelwagon. The patient, a girl who was employed in a florist's, developed a subcutaneous nodule on the arm, followed by recurring abscesses which had been forming for eight or nine months. When Dr. Pusey first saw the patient, he was unable to get any cultures, as the lesions had largely cleared up under the use of potassium iodide, her attending physician having regarded the case as one of actinomycosis.

Personally, Dr. Pusey said, he did not regard these cases of sporotrichosis as excessively rare, and in that respect, he thought we would probably have a repetition of our experience with blastomycosis, especially as far as Chicago was concerned.

DR. HYDE thought it probable that numbers of cases in this country had escaped detection.

THE THERAPEUTIC USE OF REFRIGERATION, PARTICULARLY WITH SOLID CARBON DIOXIDE*

By WILLIAM ALLEN PUSEY, A. M., M. D.

THE method of using solidified carbon dioxide for therapeutic purposes has been before the profession for three years. It has, I believe, had a wide trial, and it now has a very respectable literature, so that one can form an approximate estimation of its field of usefulness and its limitations. I have, therefore, availed myself of this opportunity to undertake to review the method and its results, in the light of the experience of others as well as of myself.

SOLID CARBON DIOXIDE AND LIQUID AIR.

Solid CO₂ was suggested as a substitute for liquid air, as an available substance of excessively low temperature, which could be used to meet the same therapeutic indications as are met by liquid air. A comparison of the two agents, therefore, and the results obtained from using them is necessary. The freezing point of carbon dioxide gas is —80°C.; the liquefaction point of air is —182° to —190°C., this point varying with the mixture of gases in the air; so that liquid air is a little more than twice as cold as solid carbon dioxide. *A priori*, however, one would expect little variation in clinical results from this difference in temperature. Both freeze tissues into solid ice instantly upon contact, and in so doing cause an insult to the tissues which probably varies little or none in degree. According to Jackson, "there is no difference in the effect on the tissues whether we use liquid air or carbonic acid snow, except that . . . the effect is more rapidly obtained by the former." Personally, I have not been able to observe any difference in the clinical results produced by liquid air and solid CO₂. As to convenience of handling there is, I believe, agreement of opinion that solid CO₂ has many advantages over liquid air. It can be manipulated more readily by the

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operator and it has a very considerable advantage in that the application can be made to conform sharply to the lesion treated. Following its introduction by Dr. A. C. White at the Vanderbilt clinic, Dr. Jackson and the other workers at the Vanderbilt clinic used liquid air largely and they believe the advantages lie with liquid air on account, as Jackson and Hubbard put it, "of the ease with which it is applied, the rapidity with which it acts, and its comparative painlessness." They grant to solid carbon dioxide the advantage that "we do not need to freeze any larger surface than is necessary." As to ease of application, I believe that point can be well challenged, if you include in ease of application accuracy of application. It is easier to dip a swab in a flask of liquid air and put it over a lesion and parts thereabout than it is to collect a mass of CO₂ snow, mold it, pare it to the shape of the lesion and apply it, but the difference is so trivial that it is of no importance. Indeed one of the chief reasons for believing that solid CO₂ will have popularity is the great convenience of the method in comparison with other methods of destroying lesions in the skin. Here one has an agent which is easily obtained, easily preserved, prepared for use in a few minutes, requires an application whose duration is measured in seconds, causes almost no pain, and whose effects are easily controlled. In these respects it thus meets in an almost ideal way the classical requirements, that a remedy should act *tuto, cito et jucunde*. Liquid air may possibly act more rapidly than solid CO₂ and may produce more violent and destructive reaction. I am uncertain about this, but granting it to be so, it is, I believe, not an advantage. Solid CO₂ will produce any degree of reaction that is desired up to complete destruction of the frozen tissue, and will do this in from a few seconds to a few minutes. The agent which will do this more rapidly would seem to have no important advantage and would have the disadvantage of being less controllable. I am not prepared to controvert the statement that liquid air is less painful than CO₂ although I do not believe that this is true. Both of them, however, present great advantages over other agents that produce the same results in that they are comparatively painless. The amount of pain from the application of CO₂ is trivial. I have made many applications on myself up to one and one-half minutes; the pain consists of, first, a sensation of cold, and then, after the application has continued for from twenty to twenty-five seconds, a stinging sensation which is comparable to a bee sting. It is a rare occurrence for a patient to offer more

than a casual complaint at the discomfort. It is a constant experience in making applications to young babies to have them cry not longer than for a period of five minutes. Occasionally over a bone, especially over the teeth, and on the face, the applications cause an aching pain that persists for half an hour or more. In short, I think one is justified in saying that the discomfort of the applications of CO₂ is so trivial that it may be entirely neglected.

As a matter of fact, however, the discussion at the present time as to the relative advantages of liquid air and solid CO₂ is chiefly academic, for liquid air is commercially unobtainable in this country and even those who prefer it are forced, because they cannot obtain it, to use in its place solid CO₂.

While speaking of the advantages and disadvantages of solid CO₂ it may be well to stop for a moment to compare it with electrolysis for certain lesions for which both are suitable. For removing small lesions like papillary ectases and moles, CO₂ has a disadvantage in comparison with electrolysis in that it causes a much greater amount of swelling. It results in a blister which leaves an abrasion which does not exist after a treatment by electrolysis. It has a counterbalancing advantage in that it is very much less painful than electrolysis.

PRINCIPLES OF THE USE OF CARBON DIOXIDE SNOW

The principle underlying the therapeutic use of solid CO₂, as of liquid air, is the production of a relatively deep, sharply defined inflammatory reaction in living tissue by sudden intense freezing. The first advantage of the method is that the reaction can be regulated so that one can accurately produce all degrees of effect upon tissues from an evanescent inflammatory reaction to a reaction so intense that it results in complete destruction of the involved tissues. The agent may thus be used for producing a stimulating inflammatory reaction or for destroying a mass of tissue as completely as one would with the actual cautery. But its most valuable destructive action is not that of an escharotic which progressively destroys all the cells with which it comes in contact. It is rather a destructive action caused by a violent inflammatory process which falls short of causing necrosis of the connective tissue, but results in an interstitial sclerosis with the destruction of more highly organized and complex structures and of diseased tissues of lower resistance. It is this interstitial scar-tissue formation which enables the method to destroy lesions in the substance of the skin with a minimal amount of apparent scarring.

HISTOLOGICAL CHANGES PRODUCED BY FREEZING

I know of no one who has made a histological study of the effects on tissues produced by the application of solid CO₂ or liquid air, a work which should be done. Juliusberg, however, has studied the changes produced in the skin by freezing with a spray of liquid carbon dioxide. Here, of course, the difference in the changes from those produced by freezing with solid carbon dioxide under pressure is chiefly that the process is less intense and more superficial, and there is relatively more effect upon the epithelium and less upon the corium. Juliusberg's description translated freely is as follows: "A piece of normal skin that was frozen half a minute with a carbon dioxide spray, excised without local anaesthesia fourteen hours later, hardened in ten per cent. formalin solution and cut with the freezing microtome, showed the following changes: The epithelium, in its entire extent, gives the impression of a homogeneous, disintegrated cell-layer; in place of cell nuclei there are pale bright particles, and only a few nuclei of the basal cells are colored and appear unchanged. Under the epithelium there is a border of massed polynuclear leucocytes, and the connective tissue is infiltrated with numerous leucocytes. The connective tissue cells themselves are swollen and enlarged. The lymph vessels are greatly dilated and filled with a coagulated, homogeneous mass. The blood vessels show perivascular leucocytic infiltration and are also dilated and filled with thrombi which differentiate themselves as a hyalin, leucocytic, erythrocytic and mixed thrombi. One obtains a beautiful picture with Weigert's fibrin stain. The whole connective tissue is interwoven with a fibrin network which appears in the papillæ as regular knots. The elastic fibres are apparently unchanged."

"During the freezing the epithelium is damaged to the greatest degree, but also in lesser degree the connective tissue. All fluid connective tissue material coagulates and remains in that condition. The enormous leucocytosis always occurs after a short time. A piece of normal skin frozen with ethyl-methyl chloride mixture or with carbon dioxide and immediately excised showed, aside from the thrombi in the vessels, no changes."

FACTORS INFLUENCING THE EFFECTS FROM FREEZING WITH SOLID CARBON DIOXIDE.

The effects produced by the application of solid CO₂ depend

upon two factors: First, the amount of pressure exerted; second, the duration of the freezing.

PRESSURE OF APPLICATION. The depth of freezing from solid carbon dioxide is controlled by the degree of pressure made in the application. Unless the snow is applied with sufficient pressure to bring it in contact with the skin, no freezing occurs, for CO₂ gas is given off so rapidly from the mass that without slight pressure a layer of gas is maintained between the snow and the skin which prevents actual contact between the two—Crook's layer. Under pressure just sufficient to make contact between the snow and the skin, superficial but instantaneous freezing occurs. Under pressure of varying degrees of firmness, freezing to the depth of from 1/32 to 1/8 of an inch or more can be produced. It follows, therefore, that in the application of solid CO₂ the amount of pressure which one exerts should vary with the effect which it is desired to produce. This brings in a question of personal equation in the operator which is developed by experience. One must use his judgment as to the degree of pressure to be used in any given application. He has a guide in that he is able to estimate the depth of freezing which he wishes to produce, and when he has produced this he can exert a pressure sufficient to maintain this depth until the application is ended. It is the application of an intensely cold agent under pressure which constitutes the essential difference in the therapeutic method of using solid carbon dioxide and liquid air, and those methods of refrigeration which depend upon the evaporation of volatile liquids sprayed upon the surfaces. With these there is only superficial freezing; with solid CO₂ and with liquid air there is the freezing to a considerable depth which results from the firm application of an intensely cold solid substance to the skin. It would hardly seem necessary to add that the source of cold in the applications of liquid air and solid CO₂ is different from that in the application of a highly volatile fluid to the surface. With the first two the source of the cold is an actually cold substance. With volatile fluids the cold is produced at the time of their application by the rapid consumption of heat which takes place in their evaporation.

DURATION OF FREEZING. The duration of the applications of the snow and of the freezing which results therefrom is the most important factor in the effect upon tissues. Momentary freezing of the skin produces a slight inflammatory reaction. If this freezing is

prolonged for not more than five or ten seconds it will, as a rule, result merely in an acute dry dermatitis. If the freezing is continued for twenty or thirty seconds, there is a very intense inflammatory reaction, usually with the formation of a bulla and with a certain amount of ultimate sclerosis of the skin. These applications of twenty or thirty seconds, as a rule, do not produce any apparent scarring, though they will produce permanent whitening of the areas. With freezing of a minute or more there results a bulla, usually with the formation of a thin, dry eschar, which separates in two or three weeks, leaving a thin, white scar. All of the scars that I have seen from CO₂ have been thin, soft, pliable, with no tendency to thickening or hypertrophy, and I believe this has been the observation of other workers with it. The duration of freezings, of course, can be absolutely controlled, and I believe, for the sake of accuracy and also for the purpose of developing a satisfactory technique, workers with CO₂ should habitually time their applications with a watch. When this is done the only factors of uncertainty in the duration of the applications are those of individual susceptibility and the peculiarities of lesions. Horn offers a very great barrier to freezing, so that in making applications to horny lesions, such as warts, the duration of the freezing has to be much increased. On the contrary, the reaction to freezing is more intense at sites where the blood supply is less abundant, as at the extremity of the limbs, and in these locations the applications are made relatively shorter than is necessary upon more vascular surfaces. Personal variability is, I believe, largely a matter of age. Young children have a much more intense reaction from short applications than do adults. Speaking broadly, I should say the skin of a child under a year old reacts three or four times as sensitively as that of the average adult; that is, a freezing of ten seconds in a child two or three months old is likely to produce as much reaction as a freezing of thirty to forty seconds in an adult. This is an important matter to be taken into consideration in the treatment of nævi in young children. I think also the skin of women, particularly of thin-skinned, fair women, approximates somewhat in its reaction that of children. Beyond these factors I have not been able to convince myself that there is any difference in the susceptibility of different individuals. Nevertheless, I believe it is a good plan to proceed cautiously with any case until one determines the reaction that will occur. An observation that is highly interesting, and that I believe is accurate, is that

skin which has been exposed to X-rays or radium to the point of producing any permanent effect, reacts with excessive sensitiveness to freezing. My attention was first called to this in treating a child thirteen or fourteen years old who had a vascular nævus which had been treated with radium. There were the atrophic changes and roughening of the epidermis, with hyperkeratoses, which characterize chronic X-ray and radium effects upon the skin. Much to my surprise I found that freezings of three to five seconds produced an intense reaction in this skin, with resulting whitening of the nævus tissue quite as great as would be produced in the same tissue in a young child by applications of ten or fifteen seconds. I have confirmed this observation in similar cases which have been treated with X-rays. The explanation, I think, is not far to seek. As a result of the X-ray or radium reaction there has been an endarteritis with the obliteration of many of the capillaries of the skin. The blood supply of the part is already deficient; the endothelium of the vessels is irritable as a result of X-rays. The reaction from freezing still further interferes with the vascularity of the tissue, produces an intense endarteritis, and thus causes an effect relatively much greater than would occur from the same application in normal tissue. I have utilized this fact in the treatment of several flat vascular nævi which I have found resistant to slight freezing with CO₂. By producing a moderate X-ray reaction one can start the obliteration of many of the blood vessels and then carry it on further with applications of CO₂, which are so short as to cause no appreciable scarring of the surface.

TECHNIQUE

I have not made any essential variations in my technique of gathering and applying the snow. When I first began to use solid CO₂ I collected it in a chamois cloth and molded it by pressing it in a cloth by the hands; later, I found it more convenient to mold it in tubes of hard rubber or metal, and I have continued that practice to the present. The simplest method of molding it is to get sections of hard rubber tubing about three and one-half inches long and pack the snow in these. Dr. R. L. Sutton improved upon these simple cylinders by attaching to one end of the metal cylinder a flange which made a funnel with an opening of a diameter of one and one-half inches. He attached these funnel ends to tubes about one and one-half inches long. These forms seemed to me to meet all possible requirements of convenience for molding the snow, and

I am using them at the present time. I have found it advantageous, however, in order to get quickly a stick of the snow of sufficient length, to lengthen these tubes to three and one-half inches, so that all one needs to do is to fill the tube and the funnel full of snow; pack it down firmly and he will have a stick an inch or an inch and a half long—of sufficient length for convenient handling. As a rammer for packing the snow, the blunt end of a lead pencil or a stick is entirely satisfactory, but if one is going to use the method very frequently, it is a good plan to have a hardwood or metal rod and a hammer; then with hammer and rod he can pack the snow as tightly as he pleases. For all except very small lesions it is, I believe, desirable only to pack the snow into a solid firm mass. Such a mass can be pared easily with a knife or melted by contact with a flat metal surface into any shape, and it adapts itself readily to any surface, and is sufficiently firm to allow all necessary pressure. The solid CO₂ can, however, be made into a mass as firm as ice by firm packing. This can readily be done by firmly packing the solid CO₂ into the molds with rod and hammer. The only condition, however, under which one needs a hard pencil of ice is where he desires to treat very small lesions. In treating such lesions I now make a pencil of the snow in a tube one-fourth or three-eighths of an inch in diameter and pack this down with a rod and hammer until I have a solid stick almost as firm as solid ice. Such a stick can be melted to any smaller size and it can be applied to lesions not larger than the head of a pin. These simple and inexpensive tools are to my mind the most satisfactory for molding solid CO₂. They are adaptable to all varieties of lesions, and with them you can make any form or size of CO₂ stick that you want. The only variation from these molds that seems to me useful, is to have molds with a square cross-section instead of round. Usually it is desired to square the CO₂ stick before it is used and there is no reason why square tubes should not be used for the molds. Professor Erich Hoffmann has suggested and is using such square molds, and they are more convenient than the round ones for larger lesions.

Numerous devices have been suggested for collecting and molding the snow. None of them has seemed to me to be better than the simple method of collecting the snow in a chamois skin and then molding it in a tube of a size that is convenient for the particular case. A device suggested by Dr. S. Dana Hubbard collects and forms the snow into a stick at the same time. This has the endorsement of Dr. Jackson and others working in the Vanderbilt clinic where so

much work with the refrigeration has been done. Dr. Hubbard's device consists of a piece of brass pipe three inches long, which screws onto the vent in the CO₂ tank. This is cut longitudinally into two sections which are hinged together so that the tube can be closed while collecting the snow and opened to allow removal of the molded stick after it is formed. It is perforated with several small holes to allow escape of the excess of gas and is covered with chamois skin on both surfaces. A fold of chamois skin is left to wrap around the tube and over the distal end while the CO₂ is being collected. This apparatus is screwed onto the vent and gas allowed to escape into it until the fine snow begins to blow out of the mold, an indication that the mold is probably full. This mold is an ingenious and workable apparatus; it is not as convenient for me as my method, but I have no doubt the preference between the two ways of collecting the snow chiefly depends upon one's familiarity.

There is a modification in the application of solid CO₂ which consists in either mixing the snow with ether or dipping it in ether just before applying it to the skin. I believe this modification was introduced by Dr. E. S. Judd of Rochester, Minnesota. The method of applying CO₂ at St. Mary's Hospital, Rochester, Minnesota, consists in making a mush of CO₂ and ether and applying this on swabs as one would liquid air. Dr. Jackson and Dr. Hubbard have modified this method by dipping the snow in ether immediately before applying the mass to the skin. In a personal communication Dr. Judd tells me he thinks that in this form the agent is not as convenient to handle, but that it freezes quicker, and Jackson and Hubbard hold the same view. To my mind this impression is open to question. There is no reduction in temperature produced by mixing solid CO₂ with ether. You can produce a mush of ether and solid CO₂ which is almost but not quite as cold as CO₂, but there is no reduction in the temperature such as comes, for example, from the rapid absorption of heat in the melting of ice with salt when they are mixed. On the contrary the most that can be done by adding solid CO₂ to ether is to cool the ether with the CO₂, just as you cool water by putting ice in it; you cannot produce a temperature below that of the solid CO₂ by the addition of CO₂ to ether. With the assistance of Mr. Henry Gale of the Department of Physics of the University of Chicago, I carefully tested the question of the temperature produced by mixing CO₂ with ether. By adding solid CO₂ to ether you can gradually reduce the temperature to approximately that of CO₂, that is, —80 C., but you cannot reduce it lower than that. Clinically,

in my experience in following the method of Jackson and Hubbard, I have seen no difference in the quickness or in the other characteristics of the freezing with solid CO₂ or with solid CO₂ dipped in ether, and in the light of the foregoing facts I believe that nothing is gained by this modification.

In treating lesions up to the size of half an inch in diameter, I believe all of the users of solid CO₂ follow practically the same plan. If the lesion is uniform in surface, it is treated by one application of a mass of the snow which is pared or molded as nearly as possible to the shape and size of the lesion. For lesions above an inch in diameter it is, I believe, the general practice, and the best practice, to shape the end of the stick of CO₂ into a rectangle, in order to get perfect coaptation of the areas treated, and then to treat adjacent areas by successive applications of the snow. In making even a single application, one is apt to get a little variation in the intensity of effect over the area. This effect is apt to be least in the part corresponding to the centre of the application or, contrary to what I expected, at the lines of coaptation of adjacent areas. This can only be avoided by care to have even pressure under your mass of snow. When these irregularities occur, they can be remedied in succeeding treatments, by making the applications so that they overlap the boundaries of those made before. Heidingsfeld has suggested, and I have tried, making applications over large surfaces not in contact with each other, but with intervals of one-fourth or one-half inch untreated skin between the applications made at any one sitting, and then at the next sitting making the applications over the intervening surfaces previously untreated. My experience with this method has not shown any advantage or disadvantage over the plan of making the applications close together, and as making the applications in contact is usually more convenient and allows of the treatment of a larger area at one time, my present practice is to treat exactly adjacent areas at the same time. Where the surfaces of lesions are irregular, or are not of exactly the same character in any respect, I think it is best to treat very large areas in individual applications of one-half inch square or even less, in order to avoid irregularities in the freezing.

Before freezing, surfaces should be cleaned to remove sources of future infection. If a surface is covered with crusts or scales or hair, these should be removed before the applications are made, because they interfere to a certain degree with freezing. The users of liquid air emphasize the importance of having surfaces free from

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moisture when liquid air is applied, because otherwise the cloth swab freezes to the surface. No swab being used in the application of solid CO₂, this precaution is not necessary. Solid carbon dioxide can be applied to an open surface or a mucous membrane without difficulty, if after the application one waits a second or two to allow the snow to free itself by evaporation before undertaking to remove it.

In using CO₂ about the mouth in babies, I have often speculated about the danger of having it fall into the mouth and be swallowed. Such an accident with a mass of solid CO₂ as big as a hazel-nut might possibly result in permanent damage to the oesophagus. Fortunately there is no difficulty in guarding against such a mishap.

For the relief of the discomfort resulting from the freezing, either warm or cool bathing is useful. Heidingsfeld recommends warm compresses; Jackson and Hubbard the application of cold water. In my experience either is effective, but my practice is to have the patient bathe the lesion for a few minutes in warm water immediately after the surface thaws, if they complain of discomfort. As a rule patients do not find the pain sufficient to warrant this little trouble; occasionally a patient eagerly avails himself of the relief.

I find practically nothing in the literature upon the subject of after-treatment of the wounds produced by CO₂, the reason being, I believe, that practically no after treatment is necessary. My practice is to caution the patient to keep the lesions clean and to have him wash them once or twice a day with hydrogen peroxide. On the face I have never used any dressings on the lesions, nor on the hands. Various men advise that the bullæ should be emptied. If this is done, I believe the flaccid epidermis should be left upon the surface to protect it. Personally, I do not open the bullæ, but I think this makes little difference, for they usually break after twenty-four to forty-eight hours at the longest. Upon covered surfaces where the lesions would be exposed to contact with clothing, I protect the lesions by a gauze dressing, dry or spread with boric acid rose ointment. The only case in which I have had unexpected ulceration of the frozen surface was one in which the after-treatment of the lesion consisted of the application of an antiseptic powder which caked on the surface. Under this there was an infection and a superficial ulceration of the corium with scarring, which was slight, but more than I expected. I believe that a soft, non-adherent dressing, either a wet dressing or such a dressing as I use, is better than a powder or any dry dressing which has possibilities of injuring the

surface. Upon uncovered surfaces crusts should be left to fall off of themselves, unless an unusual degree of infection occurs under them. They protect the surfaces, and their removal is apt to do useless damage to the recovering tissues.

Excepting an unlooked-for result which happened in one of Heidingsfeld's cases, to be referred to when considering the treatment of nævus, I know of no unforeseen results which have occurred from the applications. Of course mishaps could be produced by unintelligent use. Jackson and Hubbard, in the ten years during which they have used liquid air and solid CO₂, have never seen any untoward effects from their applications. Reginald Morton has seen no hypertrophic scarring in his treatment of nævi. I have had no accidents, and I believe it may be said that the method is entirely safe and that its effects can be accurately controlled, if it is intelligently used.

All workers with CO₂ bear testimony to the excellent character of the scars, if scars result, after its use.

When I first began using the method in nævi, I gave considerable thought to the possible dangers of masses of frozen blood floating off into the circulation and producing troublesome or dangerous emboli before they melted. I think that was a far-fetched anxiety. As to the danger of emboli occurring during the reaction stage in the treatment of vascular lesions, I believe that can be regarded as nil; no such accident is recorded, I believe, after even completely destructive freezing of a member. In the treatment of large cavernous angioma there is a possibility of sloughing with subsequent dangerous hemorrhage. This danger is, however, apparently more theoretical than real. If sloughing occurred it would be after a violent inflammatory process which would already have closed up the cavities where the danger lies. I have treated some cavernous angioma in which the danger seemed very real, one in which much sloughing occurred and I have had not the slightest trouble on this score.

THERAPEUTIC APPLICATIONS.

The therapeutic indications for the use of refrigeration are found in the following conditions:

First, those in which the production of a stimulating reaction is beneficial. (Here only conditions covering relatively small areas would come into consideration because of the impracticability of using the applications over very large surfaces).

Second, those in which it is desired to destroy certain tissues in the skin by the production of an interstitial sclerosis.

Third, those in which it is desired to produce immediate destruction of masses of diseased tissue in the skin.

It is the second one of these indications which gives this method its chief claims to therapeutic usefulness, for it furnishes a practical means of destroying tissues of lesser resistance without destroying the connective tissue stroma around them, and thus it furnishes a method of destroying certain tissues selectively and replacing them by an interstitial scar tissue formation which shows little or no scarring on the surfaces.

The various dermatoses in which, upon the basis of these indications, the method may have a field of usefulness occur, of course, to all of us, and in many of them it has been tried.

ECZEMA, LICHEN PLANUS AND OTHER CIRCUMSCRIBED CHRONIC DERMATOSES.—As a stimulant of chronic inflammatory lesions solid CO₂ offers prospects of some usefulness in circumscribed, limited patches of chronic eczema, lichen planus and similar inflammatory dermatoses. Zeisler has employed it with success for small patches of indurated eczema: Sutton reports satisfactory and speedy results from applications of from twelve to twenty seconds in circumscribed patches of chronic eczema and seborrhœic dermatitis; and Heidingsfeld has tried the method without being able to follow the case in lichen planus. In chronic thickened patches of eczema, particularly those upon the palms and soles, I believe it is worthy of trial. In a few such cases where I have used it, it has been followed by improvement. Unless the cases are very carefully selected, however, and the applications confined to circumscribed and indurated patches of chronic eczema, its use in eczema will, I believe, be of very problematical value. It is also, in my opinion, worthy of cautious trial in rebellious cases of chronic eczema around the anus. What is said of it in eczema, applies in my opinion to its use as a stimulant in other chronic inflammatory dermatoses.

LUPUS ERYTHEMATOSUS.—Lupus erythematosus is one of the diseases in which liquid air had been used with great benefit before the introduction of solid CO₂, and in my preliminary report on the use of solid CO₂ I recorded a case of lupus erythematosus very greatly improved by the use of CO₂. Most of those who have used solid CO₂ in lupus erythematosus are strongly impressed with the value of this method. Zeisler believes it is superior to all other methods. Gottheil, during the last two years, has employed only the

solid carbon dioxide treatment of lupus erythematosus and has found it very effective. Jackson and Hubbard believe that refrigeration is the best treatment for lupus erythematosus and report successful results in intractable cases where the patients have given them the opportunity to complete the treatment. In recent cases they recommend the trial first of other methods, but in chronic, thickened patches, they regard refrigeration as the remedy of choice. They freeze superficially, usually with applications of not more than fifteen seconds. Sutton has had symptomatic cures in two cases and apparent failure in a third and Dittrich has demonstrated a symptomatic cure. Heidingsfeld reported great improvement in several cases, but in a subsequent report says that he has not seen a complete cure in any of the cases. Schaleck also regards the method highly in lupus erythematosus, as do Professor Erich Hoffmann, Dr. O. H. Foerster and Dr. J. M. Winfield, who have personally communicated their experiences to me. Foerster's results in several cases have been good as regards a cure and in the cosmetic results. Foerster's technique of treatment differs from the usual technique in lupus erythematosus in that he freezes vigorously, making applications of the snow for thirty or forty seconds or even longer; I believe his method of freezing should be tried in cases which fail of result from less vigorous freezings. But I have seen deep scarring and little benefit from one case treated by applications of $1\frac{1}{2}$ and 2 minutes. I have treated several cases of erythematosus lupus by this method. They have all been of the chronic discoid type of the disease with varying amounts of induration and scaling. I have not treated with this method any cases in a state of acute reaction. In my applications I aim to produce a stimulating reaction by the freezing rather than the destruction of the diseased tissue, and as a rule my applications have been from five to fifteen seconds. Occasionally I have used applications as long as thirty seconds. In my experience, the method has, I believe, been uniformly beneficial. I think I have treated no case by this method which has not shown definite improvement. Usually this definite improvement has been shown by partial or entire disappearance of the disease and its replacement by thin white scars of the type usually seen after lupus erythematosus. This result, however, has not been always obtained over the entire surface treated, and some of the cases have shown partial recurrence. The results have been so far in advance of and so much more definite than those obtained by any other method with which I am acquainted, that I have not used any other method of

treatment in these cases since beginning the use of solid CO₂ four years ago. Janeway showed, at the New York Academy of Medicine, a case of lupus erythematosus treated with X-rays and later with solid CO₂, in which an epithelioma developed after treatment with CO₂. The case had been long treated with X-rays and much benefited. Discrete remnants of lupus were left and these were treated with solid CO₂. One patch, which was frozen twice as long as the others showed, two weeks after treatment, a swollen nodule which was excised and proved to be a squamous cell epithelioma. There had been no recurrence after excision. Janeway regarded the epithelioma as a result of the traumatism from CO₂ freezing. With the well-known tendency in lupus erythematosus for epithelioma to develop the causal relationship may be questioned, but it is possible that the irritation from freezing furnished the final exciting factor. This unique occurrence—one that happens spontaneously in lupus erythematosus—furnishes no important objection to the treatment of lupus erythematosus by this method.

INFECTIOUS DISEASES OF THE SKIN. LUPUS VULGARIS.—In the early work of White and others with liquid air, efforts were made to treat boils and carbuncles and other infections, and solid carbon dioxide has been suggested in chancroids, condylomata, lupus vulgaris and other infectious lesions of the skin. There seems to be nothing of value above other well-known agents to be expected from the use of solid CO₂ in acute infections of the skin, like chancroids and condylomata, and I believe it is not an addition of any importance in such diseases. It may be of more value as a destructive agent in infectious granulomata; it is entitled to trial in lupus vulgaris. Schaleck has had an excellent result in a hypertrophic mass of lupus vulgaris which he treated by freezing the areas and the individual nodules for thirty seconds and then by exposures to X-rays. In this way in two months he got a smooth, slightly pigmented scar. Jackson and Hubbard report good results in tuberculosis verrucosa cutis. Foerster has also had apparent symptomatic cure of lupus vulgaris from the use of X-rays followed by vigorous freezing of remaining isolated nodules. My own experience in lupus vulgaris has been limited because I have not been impressed with the prospective advantages of the method in lupus. I have treated by this method numerous individual tubercles and small patches of lupus vulgaris in a few patients, with variable results. I have found the method convenient for destroying individual nodules of lupus by vigorously freezing them with a pointed stick of CO₂, but my results

would not indicate that the method is preferable, even in small areas of lupus, to other destructive measures, except in its ease of application and comparative painlessness.

In lupus and in other microbial diseases we can, of course, only hope for such effects from solid CO₂ as comes from its destructive action, for the experiments of Parks and White, Huddleston, MacFayden, and Wolff and Meyer have shown that even prolonged freezing with liquid air has little or no effect upon the subsequent growth of bacteria.

CHLOASMA AND SENILE LENTIGO.—Zeisler, Sutton, and Jackson and Hubbard report good results from short superficial freezing in chloasma. I have in several cases, by applications of ten seconds, succeeded in completely removing patches of chloasma varying in size up to a large coin. I have also used the method with signal success in senile pigmentary spots of the face and hands. In one case I entirely removed patches of senile pigmentation, showing hardly appreciable hyperkeratoses, which were so numerous as to cover almost completely the backs of the hands. In this case the individual lesions varied from the size of a tack-head to a fingernail. An application of ten seconds was sufficient to remove each lesion and replace it by smooth, normal-colored skin. My experience has been equally successful in removing less numerous senile pigmented spots in other cases. Usually the effective applications do not need to be long enough to cause the formation of a bulla. For circumscribed patches of pigmentation, particularly senile pigmented spots, this furnishes a needed, effective, convenient, and practically painless method of treatment. I know no other method comparable with it in these cases.

TATTOO MARKS AND POWDER STAINS.—Zeisler, Sutton, Jackson and Hubbard, Heidingsfeld and Ihle have all used CO₂ in tattoo marks and powder stains. Jackson and Hubbard report successful results. Zeisler found it useful in connection with other treatment; Sutton and Heidingsfeld and Ihle found the method a failure. I have no doubt that tattoo marks and powder stains can be removed by this method, but only by sufficiently vigorous freezing to cause the formation of superficial dry eschars which will result in scarring.

KELOIDS AND HYPERTROPHIC SCARS. XANTHOMA PLANUM.—Improvement or removal of keloids or hypertrophic scars have been reported by Hoffmann, Schaleck, and Jackson and Hubbard. Schaleck has had great improvement in one case of keloid, and in another case the symptomatic cure of a very unsightly keloid across the

nose which he treated by repeated freezings, but not enough time had elapsed to be sure of the permanency of the result. In view of the persistent tendency of keloids to return after all sorts of destructive methods of treatment, I confess to skepticism as to the permanency of the results from carbon dioxide snow. In view, however, of these favorable experiences, the method is worthy of trial in small keloids and hypertrophic scars. I have not used it in keloid, preferring X-rays.

Sutton, in a personal communication, reports excellent results in a case of xanthoma planum. I believe the method will probably prove a satisfactory treatment for xanthoma planum. Where lesions exist on the upper lids the solid CO₂ can be applied in the way described under vascular nævus.

WARTS AND CALLOSITIES.—Zeisler, Sutton, and Jackson and Hubbard recommend solid CO₂ for the removal of warts. Foerster, after a trial of the method, prefers the curette and a caustic, and Winfield regards the method as of indifferent value. In my experience, solid carbon dioxide furnishes a convenient method for treating the multiple soft flat warts of children. Applications of twenty to thirty seconds cause as a rule their prompt disappearance, and in a good number of such cases treated by me I have seen no scarring from the treatment. The firm warts of adults covered by a thick layer of horn are very much more difficult to treat, but in spite of this I have found the method more effective and convenient than any other method with which I am acquainted. I have treated several cases of large thick warts around the nails which had resisted the ingenuity of competent men with other methods. By repeated vigorous freezings—60 to 90 seconds—sharply confined to the surface of the wart, I have been able to remove completely these lesions. The freezings have been given three or four weeks apart and have been followed by the gradual disappearance of the warts. The long freezings in these cases do not cause the formation of bullæ or severe reactions because of the great resistance to the freezing which the thick horny epidermis affords. In these cases it is a good plan to first pare off as much of the horn as possible without causing bleeding before applying the CO₂. Sutton has had good results in the treatment of plantar and palmar warts. His method is to freeze down into the centre of the wart for thirty to sixty seconds with a hard pencil of CO₂ applied under firm pressure. After thawing, a second application is immediately made. For soft pedunculated warts of adults or the old, the method offers a remarkably easy way of re-

moval. My plan is to grasp the wart between the ends of two firm round sticks of the snow so that the wart itself is thoroughly frozen without freezing the surrounding skin. After a freezing of forty or fifty seconds the wart swells for twenty-four hours, then dries up and drops off.

It is possible that the method may be of value for removing callosities as has been suggested, but thick masses of horn are so resistant to freezing and on account of their poor conductivity interfere so much with the deeper effects, that without any experience I doubt whether the treatment will prove of particular use in these lesions. Zeisler has used it in a stubborn case of keratosis palmaris with a good result.

NÆVI.—Nearly all of the workers who have used CO₂ in nævi report favorably upon it in comparison with all other methods of treating these lesions. Among those who have reported upon this subject are Sutton, Heidingsfeld, Schaleck, Jackson and Hubbard, Reginald Morton, and Mac Leod, and, in personal communications to me, Foerster, Judd, and Winfield. Two of the most interesting reports are those of Mac Leod and Morton of London, which following Paris is now extremely enthusiastic over the use of radium. Mac-Leod in demonstrating three cases of nævus before the Dermatological Section of the Royal Society of Medicine, stated that as far as his experience had gone he "had found that it excelled every method he had tried for the treatment of the raised vascular nævi. It has certain advantages over the treatment of such lesions by radium, in that the results are as good, if not better, as far as the scar is concerned, and the treatment is more simple and rapid and far less costly." Reginald Morton, in a very thoughtful paper upon the treatment of nævi, in which in his hospital work in London he has had an enormous experience, concludes: "Personally I look upon solid carbon dioxide as the most important addition to the list of physical agents employed in therapeutics since that of radium, and as I have already stated, I predict that it will be found to compete successfully with radium in the treatment of many superficial lesions." From the statements of the various reporters upon the treatment of nævus, I believe that their experience corresponds very closely with mine. I have treated a very considerable number of pigmented and vascular nævi by this method.

MOLES AND PIGMENTED NÆVI.—The method furnishes an almost painless and a convenient means of removing moles. In children, applications of ten to thirty seconds are sufficient; in adults the

lesions are rather resistant and at times they require freezing for a minute or more, but in adults there is no difficulty in removing them in this way with little or no scarring. I have never had any pitting or irregular scarring after removing them. Occasionally a trace of pigment is left in the skin which may be easily removed by a subsequent freezing. In individuals of dark complexion there may be left at the site of the mole, not a scar, but a minute spot lighter than the surrounding skin, and in the treatment of moles about the face this whitening of the site must be guarded against; this, of course, can be easily done by erring on the side of doing too little rather than too much in a single application. In removing moles by this method the trace left is about the same as after successful electrolysis. There is not the same risk of an irregular scar that there is from electrolysis or from other escharotic methods. For moles not larger than a French pea there is little difference between this method and electrolysis, and there is not as much risk, I believe, of an irregular scar as there is from electrolysis or other escharotic methods. On the other hand, CO₂ is followed by much more swelling than occurs after electrolysis and by a small excoriated surface which is practically absent after electrolysis.

In the treatment of pigmented nævi from the size of a finger-nail to a large coin, or somewhat larger, the results are in my experience about as good as possibly could be expected from any method of treatment. I have treated numerous lesions of this sort with almost no visible resulting scar. In dark-skinned individuals the site of the lesion remains more perceptible than in lighter persons, because of the impossibility of reproducing the pink and brown tints of the normal skin in the skin left at the site of the nævus. In lighter-skinned individuals I have, in the most successful cases, been able to remove the lesions practically without leaving any visible trace. The sites of the lesions can be made smooth and white, or of almost normal skin color, with almost inappreciable scarring of the surface and without contractures or irregularities in the scarring. I have removed more than one pigmented nævus larger than a shilling involving the lower eyelid from the ciliary border, without producing the slightest suspicion of ectropion. I have found no difficulty in working upon pigmented nævi no matter what their location, nor have I found difficulty from the different degrees of hypertrophy of the tissues in different nævi. In lesions which consisted simply of a deposit of pigment in the skin I have been able to work as in other pigmentary lesions, using short applications with successful results.

In thicker lesions, I have used applications of ten to thirty seconds in young children and twenty to forty seconds in older children or adults. I have found no difficulty in removing superfluous hairs with the other excessive tissue in pigmented nævi, usually using somewhat more vigorous pressure and making my applications a little longer than in the non-hairy lesions. In one case, however, I obtained a practically perfect result in a pigmented nævus covered with coarse hair on the forehead of a boy six years old by applications of ten seconds. My technique in the treatment of these nævi, as of other lesions where I do not wish to destroy them immediately, regardless of scarring, is to make applications at intervals, which are long enough to allow the entire disappearance of reaction, until the desired result is obtained.

My experience with pigmented nævi above the size of a large coin is not so extensive as with the smaller lesions, and my results have not been so perfectly satisfactory. With these larger lesions I have succeeded in replacing the nævus with the same smooth, non-contracted, thin scar tissue, but there has usually remained a very slight but appreciable depression of the surface. I have been able to get rid of mottling from irregular remnants of pigment where the treatment has been continued as long as desired, but in some of the cases treatment has been stopped before the surface had been uniformly free from the excessive pigment. I have demonstrated to my satisfaction that the treatment can be applied successfully by the exercise of patience and persistence to very extensive pigmented nævi. I have already reported upon one case of this sort, the most extensive case of pigmented nævus that I have treated, in which the lesion covered almost the entire side of the face, and in which I succeeded in removing the nævus completely, leaving a whitened surface with some mottling from the remnants of pigment left in the skin. These remnants I have an engagement to treat during the coming summer. In this case I first removed the hair by the use of X-rays, which I think is good practice in the treatment of such lesions, not so much for the removal of the hair, but because of the increased susceptibility to the effects of freezing which the X-rays produce.

VASCULAR NÆVI.—As regards the results from this method of treatment my experience would divide vascular nævi into three classes: First, flat vascular nævi and port-wine marks without elevation; second, small hypertrophic nævi; third, large hypertrophic nævi.

FLAT VASCULAR NÆVI.—Contrary to my expectations I have found the flat vascular nævi the most difficult to treat satisfactorily by this method. With them the problem is rendered more difficult because there is no superfluous tissue which can be destroyed in destroying the excess of vascular tissue, so that in treating these, in order to destroy the excess of blood vessels, some depression of the surface may be necessary. I have succeeded in treating some perfectly flat vascular nævi to the point of almost completely obliterating the excessive redness without causing any appreciable scarring, and have left the surface almost of normal skin color, perhaps slightly whiter over most of the area and slightly mottled with a little remaining redness. I have succeeded in doing this even in young ladies. On the other hand, I have completely failed in three cases to produce any effect on the redness by the tentative treatment which I have given them, and have advised against further treatment. In one case of this sort in a man I have been able, after first failing to produce appreciable improvement, to produce very great improvement—improvement that bids fair to end in practical obliteration of the nævus—by first giving X-ray exposures up to the point of producing a very slight reaction. This caused no appreciable blanching of the nævus, but subsequently I was able with applications of ten seconds to produce almost complete disappearance of the redness, with almost inappreciable change in the texture and contour of the skin.

SMALL HYPERTROPHIC VASCULAR NÆVI.—In these lesions which have an excess of vascular and connective tissue, the problem is much simpler because of the superabundance of tissue which may be destroyed in destroying the blood cavities without leaving depressed scars. Such lesions up to the size of a large coin can, as a rule, be removed, leaving the skin so nearly normal that the trace causes little or no cosmetic defect. This statement applies also to the cavernous angioma up to the size of an olive. With cavernous angioma of the diameter of a large coin the results are almost as perfect. I have treated such lesions upon all parts of the face, and I have treated several cases which involved the lower eyelid as well as the skin below. In one case I treated successfully a round vascular nævus as big as a hazel-nut of the lower lid of a baby, with the result that the site is almost imperceptible. I have treated with almost equally good results a hazel-nut size vascular nævus on the upper lid of a three-months-old baby. In this case I was able to apply the snow to the lid without exposing the eye to the danger

of freezing by holding the lid in a broad lid forceps with a solid under blade and an upper blade which had an opening over almost its entire surface. An assistant, after fixing the forceps on the lid, holds the lid away from the eye and the freezing is then carried out without danger to the eye. I have treated numerous cavernous angioma up to the size of a walnut. I am referring now to the dome-shaped lesions which appear as though they consisted of one large blood cavity. The cases of this sort which I have treated have been, as a rule, in young children, and I have found that they yield readily to short applications—ten to twenty seconds, perhaps repeated two or three times at intervals of three weeks or more. Contrary to my expectations I have gotten smooth scars in these cases without puckering.

LARGE HYPERTROPHIC NÆVI.—In large nævi—nævi up to or above the size of the hand—in which the excess of tissue consists in great part of connective tissue and in which there are few blood cavities, I have not had the complete success that I have had in lesions of this sort not larger than a coin. I have, or have had, under treatment numerous cases of this sort in which very great blanching of the surface has been produced, and much improvement also from flattening down of the surface to the normal contour of the skin, but I have had no case of this sort in which I feel that a complete result has yet been obtained. Most of these cases have been in adults who have had all sorts of other efforts made for their relief. The patients are, I believe, unanimous in the opinion that much more has been done for them in this way than had been done before. It is worth mentioning, while speaking of these cases, that former efforts of treatment which usually have consisted of linear scarifications or electrolysis, have interfered somewhat with the treatment by this method. Wherever such treatments have been used the small linear scars remain to disturb the smoothness of the surface after treatment with CO₂. I have treated one case of very extensive cavernous nævus in a child less than a year old. This was a dark purple, almost black, nævus with a great excess of vascular tissue which distorted the whole right side of the face. It involved both lids of the right eye, the ear, all of the cheek and forehead on one side and almost half of the scalp. The surface was lobulated from many cavities varying in size from that of a pea up to that of a walnut or larger. A half dozen applications of CO₂ made at one time over various points of the nævus were followed by an intense reaction; this was succeeded by ulceration of the entire surface of the nævus; the whole

resulting, in the course of two months, in the disappearance of almost all of the excess of nævus tissue. There were left in the scar numerous subcutaneous angioma up to the size of a hazel-nut and lines of hypertrophic vascular tissue, but the contour of the child's face was restored practically to normal. Previously the child could not open the involved eye; after the reaction, the lids of this side were practically normal, and as the reaction did not disturb the eye, the child has now perfect use of that organ. There is very little visible scarring, and except for the remnants of nævus left in the area, the disfigurement remaining is slight. This child has had applications at intervals of a few months during the two years since the first treatment, with considerable improvement from each treatment; but there has been no such marked change from subsequent treatments as occurred from the first. The reaction in this case was of the same character as occasionally occurs in these cases from spontaneous sloughing. Previous to the first treatment the child had had severe haemorrhages from spontaneous rupture of blood vessels, but there was no hemorrhage during the destructive reaction from CO₂. Heidingsfeld has reported a sloughing of a cavernous nævus of the arm in a child some weeks after treatment with CO₂, which was followed by slow healing; this I should expect was of the same character as the sloughing in my case and in cases in which sloughing occurs spontaneously.

SENILE AND X-RAY KERATOSES.—Foerster, Heidingsfeld and Ihle, and Sutton report excellent results in senile keratoses. Winfield has gotten "perfect results" in senile keratoses. For simple senile keratoses and for senile warts in which there is some hyperplasia of other tissues as well as of the epithelium, I have found this method an entirely satisfactory means of treatment both in its ease of application and in its results. After freezing with CO₂ for forty seconds to a minute one gets, in two to three weeks, a smooth white area with practically no evidence of scarring. Where senile keratoses show an irritated red base, indicating that they have become epitheliomatous, I have had equally good results, but I freeze these lesions more vigorously, using firm pressure for a minute. The scars after these treatments are almost nil. For the treatment of senile keratoses, even when they have begun to undergo epitheliomatous degeneration, this method is, I believe, the best we have. Its advantages lie; first, in its ease of application and painlessness; second, in the practical freedom from scarring; third, in the radical destruction of the lesions which it produces, for in my ex-

perience the results are not only cosmetically successful, but they are permanent.

I have had equally good results in numerous similar keratoses, many of them epitheliomatous, on hands affected by chronic X-ray atrophy.

EPITHELIOMA.—Zeisler, Schaleck, Foerster, Sutton, and Jackson and Hubbard have had excellent results in the treatment of superficial epitheliomata with solid CO₂. Whitehouse has had equally good results in the treatment of these lesions with liquid air, which I believe he regards as more satisfactory than CO₂. Foerster, and Jackson and Hubbard regard the method as better than X-rays in superficial epitheliomata, and Sutton and Zeisler regard it as equally as good. The technique of all of them, who have reported favorably upon its use in epitheliomata, consists in vigorous freezing under firm pressure for thirty to ninety seconds. They emphasize the ease and convenience of the method, the cosmetic excellence of the scars, and the radical results, as far as can be judged in the time that has elapsed since the treatment has been in use. All of them recommend the method for superficial lesions, chiefly for the rodent ulcer type of lesion. My experience covers a large number of cases of senile keratosis, which were showing superficial epitheliomatous infiltration of the base and numerous other superficial, minute epitheliomatous nodules, which have arisen at the site of senile keratoses. In these lesions my results have been of the same character as those reported by other men. Except for these very small and superficial lesions, I do not believe that CO₂ is a method of choice in epithelioma. In larger or deeper seated lesions, I very decidedly prefer X-rays. Particularly in epitheliomata which are well down in the subcutaneous tissue, I believe we should not depend upon CO₂. I should personally feel very much safer from treatment by curetttement and cauterization with zinc chloride or caustic potash or from the use of X-rays.

In conclusion, I believe it may be said, first, that refrigeration with liquid air or solid CO₂ is a method of treatment that is an advance of value in the treatment of a considerable group of lesions of the skin, some of which have been intractable to other methods at our command; and, second, that the introduction of solid CO₂ has made the method practically available.

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EXTRAMAMMARY PAGET'S DISEASE, WITH REPORT OF A CASE OCCURRING ON THE FOREARM, ASSOCIATED WITH A NÆVO-CARCINOMA.*

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WITHIN a few years after the appearance of Sir James Paget's communication, "On Disease of the Mammary Areola Preceding Cancer of the Mammary Gland," in which he for the first time called attention to the disease which has since borne his name, other observers began to report isolated cases occurring in other regions than the mammary areola which, presenting much the same clinical and histological features, were soon recognized as being in all probability identical with the affection described by Paget. One of the first of these extramammary cases was reported by Mr. Henry Morris, in the London Medico-Chirurgical Transactions for 1880 under the title, "On a Case of Epithelioma of the Neck Following a Patch of Chronic Skin Disease." While Mr. Morris did not make a diagnosis of Paget's disease in this case, he regarded it as closely allied to this affection. The condition of the skin which had preceded the appearance of the carcinoma was described as a circular, red, scaly patch which had remained unaltered for five years when it was injured; it then became a sore, gradually increased in size, and nine years after the first appearance of the skin disease epithelioma appeared. Another of the early cases occurring outside the mammary areola, and a much better known one, is the case reported by Crocker to the London Pathological Society, in 1889, in which the scrotum and penis were the seat of an eczematoid condition which, after a duration of two years, was followed by the development of epitheliomatous nodules in the centre of the patch. This case was seen by Sir James Paget who agreed that it was probably identical with the affection which he had previously described. Pick, Tommasoli, Tarnowsky and Sequeira have

* Read before the 34th Annual Meeting of the American Dermatological Association, Washington, D. C., May 3-5, 1910.

each reported a case in which the disease was situated upon the glans penis, Darier and Couillaud one on the scrotum and perineum, and Dubreuilh one in which the vulva was affected. Crocker, in the last edition of his Diseases of the Skin, refers to two other cases affecting the penis and scrotum, one seen by Neisser and one by Pospelow, but I have been unable to verify these after a careful search of the literature. In addition to these published cases I am permitted to refer to two unpublished ones occurring in the practice of Dr. Charles N. Davis, one upon the scrotum which I had the privilege of examining microscopically some years ago, and one upon the glans penis which has recently been exhibited at a meeting of the Philadelphia Dermatological Society.

Sheild observed a most extensive case in which the skin over the pubic region was affected. There was a raw, red, glazed surface extending almost from one groin to the other, in the middle of which three tumors appeared some little time after striking the part. The disease had been regarded for eight years as an eczema, but the histological study of the case by Rolleston and Hunt fully established the diagnosis of Paget's disease.

Fox and Mac Leod have reported a case situated in the umbilical region. Around the umbilicus was a circular, bright-red, circumscribed patch which had been slowly extending for eleven years, but had occasioned the patient very little annoyance. A histological examination of an excised portion of the patch confirmed the diagnosis of Paget's disease.

One of the most extensive cases of this affection occurring outside the mammary region has been reported by Jungmann and Pollitzer. It began with a small red patch in the left axilla which slowly spread until it covered the left half of the thorax anteriorly, extended to the scapular region posteriorly, and two-thirds of the way down the inner side of the left forearm. After nine years' duration, during which the diseased parts had been subjected to various forms of treatment, including curetttement, a tumor developed in the axillary cavity which, upon histological examination, proved to be a pavement-celled carcinoma.

At the Eleventh International Medical Congress held at Rome in 1894, Ravagli reported a case of Paget's disease of the nose. The skin at the inner canthus of the right eye became red, hard, and infiltrated; later nodules appeared in the diseased area which after a time underwent ulceration. Although, as the author states, the

patch presented the appearance of a superficial epithelioma, a diagnosis of Paget's disease was made because of the finding of the large round cells which at that time were thought to be psorosperms, in sections made from the patch.

Winfield, at a meeting of the Brooklyn Dermatological Society, in 1896, presented a case in which there was an eczema-like eruption along the vermillion border of the lower lip which had lasted four years uninfluenced by treatment; after a time induration began to develop in the centre of the diseased area.

Fordyce observed a case of disease of the skin of the buttock following an injury to the part which presented many of the clinical features of Paget's disease, and he regarded it as probably an example of this malady, although the histology presented certain variations from the usual type of this affection.

A few years ago I had an opportunity to examine a case of extensive Paget's disease of the buttocks in the wards of the Hospital of the University of Pennsylvania which was under the care of Dr. Duhring, to whom I am indebted for the privilege of making this brief reference to it. The disease occupied the entire region lying between the tuberosities of the ischia, the tip of the coccyx above, and the perineum below. The surface of this extensive patch was bright red and moist, with irregular areas of grayish epidermis scattered here and there; the borders were sharply circumscribed and somewhat polycyclic. In the centre of the right half of the diseased region was a small button-like elevated lesion presenting the external features of an epithelioma. Although no microscopical examination was made in this case, its clinical features were so well marked and characteristic that there can be no doubt that it was an example of extramammary Paget's disease.

In May, 1908, O. S., a man sixty-four years old, was referred to me on account of a cutaneous affection of the arm presenting, at the time of his first visit, the following unusual clinical features: On the outer side of the left forearm, beginning a little above the elbow joint and extending downward, was a palm-sized, circumscribed irregularly oval patch with a bright red surface, for the most part smooth, but in places slightly scaly, over which were scattered a few pea-sized erosions covered with yellowish crusts, and about the border and within the upper portion, a number of flat, shot-sized nodules covered with brownish crusts. In the centre of the upper margin of this patch was a rather superficial ulcer about an inch in diameter,

with a slightly infiltrated border, covered with exuberant granulations over which were scattered a number of irregularly shaped islands of bluish-white epidermis. The subjective symptoms were trifling, consisting chiefly of moderate itching. The disease had lasted about fifteen years, and had until recently, at least, been regarded by the patient and his physician as an eczema and had been treated as such, but with little success. The history of the affection as obtained from the patient was as follows: A slightly pigmented mole situated upon the upper and outer part of the forearm some little distance below the elbow, after being bruised a number of times became sore and served as the starting point for a slowly spreading inflammation of the skin. After a time the mole itself was lost in the midst of this inflammatory patch and some time later an ulcer formed at its site, which slowly but steadily enlarged until the present time. Shortly after coming under my care X-ray treatment was begun and continued with interruptions until a month ago. Under this treatment there was immediate and decided improvement at first: the ulcer began to heal, the redness of the surrounding patch became markedly less, and the small nodules around and within the latter disappeared. This improvement continued until the ulcer had almost completely closed; but with the temporary suspension of the X-ray exposures there was a speedy relapse—the ulcer began spreading until it had reached almost its former size, redness and small nodules again appeared in the surrounding skin and improvement did not occur as promptly as before with the resumption of treatment. Owing to the inexplicable behavior of a new tube which was employed at this time a severe X-ray burn occurred, producing an extensive loss of substance which has been very slow in healing until the past month or two; but this X-ray ulcer has recently begun to close up rapidly, and there is now every prospect of a cure, no evidence of disease being perceptible when the patient was seen a few days ago.

One of the nodules and portions from the margin of the ulcer and from the border of the inflammatory patch surrounding it were excised for microscopic study. While these various parts possessed a considerable number of features in common, they yet showed enough differences to warrant their description separately. In sections made from the margin of the ulcer the epidermis had completely disappeared from that part forming its immediate edge, but was present in the remainder, increasing in thickness as one

receded from the edge, showing abundant evidence of degeneration. Scattered here and there was a moderate number of isolated, large, round vacuolated cells from which the protoplasm of the body had entirely disappeared, leaving the shrunken nucleus lying loosely in a cavity. In the portion of the sections farthest removed from the ulcer the entire thickness of the epidermis, which was decidedly increased, had undergone vacuolation with the exception of one or two very small islands of cells which had retained their protoplasm, transforming it into a honey-comb-like structure. The entire corium was occupied by fairly large rounded alveoli with fibrous walls, filled with large degenerated epithelial cells, the whole presenting the histological features characteristic of a nævo-carcinoma.

The sections made from the large patch surrounding the ulcer exhibited some very interesting changes, most of them more or less characteristic of Paget's disease. The epidermis was several times thicker than normal and contained many of the large round, so-called Paget cells, which in places were arranged in round or oval areas surrounded by one or two rows of apparently normal epithelium producing a kind of alveolation of the epidermis. Beneath the thickened and degenerated epidermis the subpapillary layer of the corium was occupied by a moderate cellular infiltrate composed chiefly of lymphocytes with a considerable number of plasma cells and a moderate number of mastzellen. This cellular infiltrate did not form an uninterrupted layer beneath the epidermis as is usual, but occurred in circumscribed areas. The number of plasma cells, too, was much less abundant than is usual in Paget's disease. All in all, however, the sections were fairly typical of this affection.

Sections made from the nodule excised showed a sharply circumscribed acanthosis in which the cells were decidedly smaller than normal and had for the most part lost their prickles. The most striking feature of these sections, however, was the narrow, deeply stained band of fibrous tissue and flat cells with elongated and deeply stained nuclei which separated the epithelial mass from the corium beneath, and dipping into it at intervals produced a partial lobulation of it. The subpapillary part of the corium was occupied by an abundant infiltrate of lymphocytes with plasma cells and mastzellen in moderate numbers.

There are several features of this case which seem to me to be deserving of special notice. So far as I am aware, this is the first reported case in which a nævo-carcinoma has been associated with

anything resembling, even remotely, Paget's disease. Moreover, there was apparently a reversal of the usual sequence of events since the history makes it probable that the carcinomatous degeneration of the nævus preceded the appearance of the Paget's disease. Although a similar reversal has been observed before it must be unusual. Kyrle has recently reported a case of mammary cancer in which an affection of the skin of the breast resembling Paget's disease appeared after the carcinoma of the gland. I am bound to say, however, that the reading of this paper left some doubt in my mind as to the correctness of the author's conclusions as to the sequence of the two affections in this case. According to Jacobaeus this is the usual course of the malady, this author regarding it as carcinomatous from the very beginning, the affection of the skin being secondary to the gland carcinoma. He does not believe that the so-called Paget cells are epithelial cells which have undergone cancerous degeneration *in loco*, but that they are gland-cancer cells which have migrated to the epidermis, usually from the milk ducts, and have multiplied in their new location. The nodules which were scattered about in the border and over the surface of the inflammatory patch surrounding the ulcer were likewise peculiar both clinically and histologically. They were not the nodules which are frequently seen on epitheliomatous surfaces, but came and went throughout the disease, not always limited to the patch, but occasionally seen some distance from it in the midst of apparently healthy skin, and easily influenced by treatment. Both in their clinical and histological features they bore a close resemblance to the small crusted nodules which are not infrequently seen in long-standing cases of seborrhœic eczema of the sternum.

A recent writer remarks that, in view of their small number, the cases of this disease which have been observed outside the region of the breast are to be regarded as accidental occurrences rather than regular examples of the affection; but as I have succeeded in collecting from various sources no less than eighteen cases situated in parts of the skin other than the breast, it would seem that these extramammary cases are no longer to be regarded as accidents. Indeed Sir James Paget himself, although he described the disease as one of the mammary areola and nipple, was not unaware of the possibility of other parts being affected in a similar manner, for he remarks: "I believe that a nearly similar sequence of events may be observed in other parts. I have seen a persistent rawness of the

PLATE XLVI.—To Illustrate Article by Dr. M. B. HARTZELL.



FIG. 1.
Lesion on forearm.



FIG. 2.

Alveoli in the corium filled with degenerated epithelium. Border of ulcer.
16 mm. Obj., Comp. Oc. 4.

PLATE XLVII.—To Illustrate Article by DR. M. B. HARTZELL.

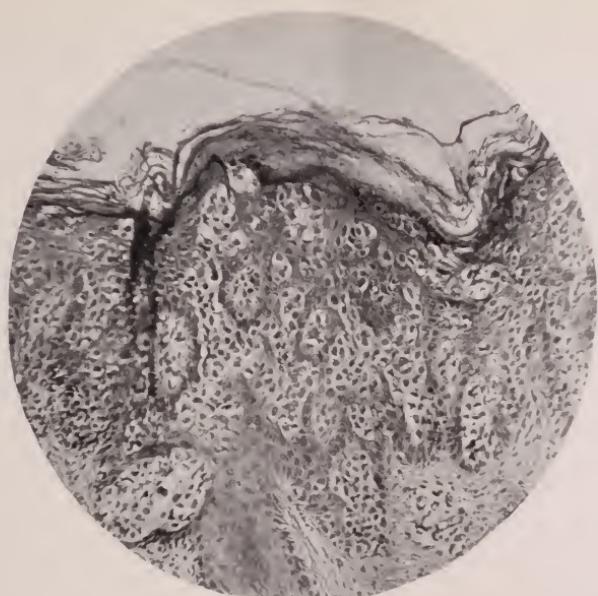


FIG. 3.

Degeneration of epidermis with alveolation. Patch surrounding ulcer. B.
Obj., Comp. Oc. 4.

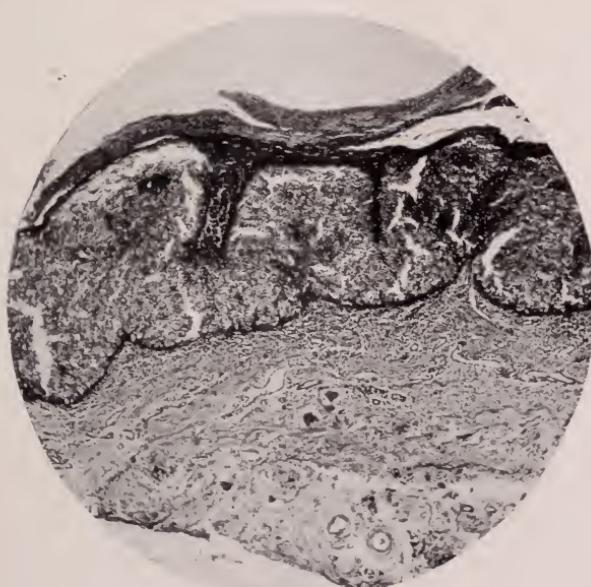


FIG. 4.

Nodule from border of patch around ulcer. AA. Obj., Comp. Oc. 4.
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glans penis, like a long enduring balanitis, followed after more than a year's duration, by cancer of the substance of the gland. A chronic soreness or irritation (of whatever kind) on the surface of the lower lip often long precedes cancer in its substance."

It is a very noteworthy fact that of these eighteen cases no less than nine occurred on the external genitalia, or in parts immediately adjacent thereto; and five of these nine affected the glans penis. Such a large proportion of cases affecting a special region can not be the result of mere accident. Jacobaeus would explain this preponderance of cases in the genital region by the unusual development of glands in the skin of this locality, from which the disease, according to him, takes its origin.

In conclusion, it seems to me that these cases which I have ventured to call extramammary Paget's disease afford special opportunity for determining the real nature of this extremely interesting malady—for deciding whether the disease is one *sui generis*, as maintained by Unna and others, or whether it is carcinoma from the beginning, as is asserted by a number of recent writers. The careful study of these cases ought also to enable us to determine whether the cutaneous disease is the primary one, followed only after a considerable interval by carcinoma, as has long been believed, or whether as Jacobaeus, Hirschel and others assert, the skin symptoms are only a secondary manifestation of a deeper lying carcinoma which has already existed for some time. The correct decision of this question is of the utmost practical importance, for upon it depends the plan of treatment to be adopted. If the former view is the correct one then there is a reasonable prospect that early and prolonged treatment by the X-ray or by radium may effect a radical cure; but if the latter, then every day's delay in thoroughly removing by surgical measures the entire disease is valuable time lost, and impairs by so much the patient's chances of recovery.

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DISCUSSION.

DR. SAMUEL SHERWELL said he had listened to Dr. Hartzell's paper with great interest for a certain reason. With Dr. Bulkley, he was present when Paget first demonstrated this disease in London, at the International Congress of 1881, and the following year he himself had a case which was typical in character, which he reported to the New York Dermatological Society about six months prior to the appearance of Dr. Duhring's paper on the subject in Philadelphia. The case was seen by Dr. Bulkley at the time, and recognized by him as absolutely characteristic of Paget's disease.

Personally, Dr. Sherwell said, he had always looked upon these lesions as carcinomatous from the beginning. Since the report of his first case, and very shortly after reporting it he had seen two additional ones, and in one of these in which the disease was very extensive, affecting the nipple and areola, he had applied the acid nitrate of mercury very thoroughly. The improvement was of course only temporary, as the deeper tissues were already involved, as was usual in these cases. The apparent cure, at least the superficial cure, lasted for some time although the deep induration of the breast was already quite manifest, so that absolute relief was not believed possible at the time of the operation. Personally, he thought that the term Paget's disease should be limited to those of the breast, though naturally all were carcinoma in character from the start, with an unusual form of commencement.

DR. A. RAVOGLI said that in the case of psorospermosis of the skin, which he reported in Rome in 1894, to which Dr. Hartzell had referred in his paper, the condition existed for a couple of years exactly as described, and the patient died from carcinoma. This led him to change his view of the case, and he decided that the original lesion was to be considered as a pre-cancerous condition. There was no doubt that in the beginning it did not resemble cancer. The lesion extended from the glabella down the left side of the nose, and its appearance was not at all typical of epithelioma, showing as it did those peculiar whitish pearls which had been described in cases of psorospermosis. The microscopic examination showed the large round bodies which were described by Darier, and which first looked like psorosperms. After some time the ulcerated surface gradually began to assume the appearance of an epithelioma and then changed to carcinoma, from which the cervical glands were infected and death finally occurred. From his study of this case, Dr. Ravogli said, he was decidedly of the opinion of Dr. Sherwell, that these cases were carcinomatous from the beginning, and the initial onset was only a pre-cancerous condition.

DR. J. A. FORDYCE showed a photograph of a case of Paget's disease of the nipple with secondary lymphangitis and areas of ulceration close to the original patch. The latter were probably the result of the breaking down of the cancerous lymphangitis.

Referring to the case quoted by Dr. Hartzell of Paget's disease secondary to cancer of the breast, Dr. Fordyce said he had lately seen a similar case in which Paget's disease had followed mammary carcinoma. He expressed the opinion that cases of extramammary Paget's disease, at least those which clinically resembled Paget's disease of the nipple, were more common than was usually supposed. He had himself reported two such cases where all the clinical features of Paget's disease were present in the early stages. Histologically, however, they were basal-celled epitheliomata, and while degenerative changes due to oedema of the cells were present, they were not identical with those found in Paget's disease of the nipple.

DR. J. NEVINS HYDE said he was inclined to agree with Dr. Fordyce that these cases were probably more numerous than was formerly believed. In fact, he was surprised that Dr. Hartzell had reported only eighteen cases as he and his associates had seen at least three cases of extra-mammary Paget's disease.

As to Dr. Hartzell's suggestion that the cutaneous disease might be primary, followed only after a considerable interval by carcinoma, and that the skin symptoms might be only a secondary manifestation of a deeper lying carcinoma which had existed for some time, the importance of determining this was great. Many surgeons held the view that in every case of Paget's disease of the nipple, the mammary gland had been already involved; they looked askance at any method of treatment short of complete removal of the breast. If the cases so well collated by Dr. Hartzell showed that we could have a primary dermatitis of a carcinomatous character, developing later into Paget's disease, we certainly were in possession of a fact of value from a therapeutic point of view.

DR. MARTIN F. ENGMAN said there was no more fertile field, nor one that offered better prospects in the study of cancer, than did this subject of malignant papillary dermatitis. Since reading Dr. Fordyce's article on the subject, published a number of years ago, the speaker thought he had seen a comparatively large number of these cases. Some of them had come to him with the diagnosis of chronic eczema, and they subsequently proved, both clinically and pathologically, to be types of this disease. Others he had mistaken for lupus erythematosus of long standing. He had seen the same process occurring on old patches of other diseases; for example, seborrhœal eczema. The disease probably presented different aspects, and from an aetiological standpoint it was of great interest, and one that offered many prospects for extending our knowledge of cancer.

DR. JAMES M. WINFIELD said that Dr. Hartzell had mentioned a case which had been presented at a meeting of the Brooklyn Dermatological Society in 1896, in which there was an eczema-like eruption along the vermillion border of the lower lip, which had lasted four years uninfluenced by treatment, and where, after a time, induration began to develop in the centre of the diseased area, and the growth was finally removed by a V-shaped incision. Microscopically, it proved to be an epithelioma. The patient remained well for a year; then the disease again appeared, with involvement of the glands, and death.

Two or three years ago, Dr. Winfield said, he saw a woman physician with a peculiar raw looking patch over the region of the scapula, just where the tip of the corset steel irritated the skin. She stated that she had first noticed it about eight years previously and that she had consulted a dermatologist, and he told her that it was a seborrhœal eczema. It failed to heal, however. When Dr. Winfield saw her, the lesion was typical of Paget's disease of the nipple, and was a little larger than a silver half dollar. It was excised, and at the

same time a large, congenital pigmented mole on the breast was also removed. Pathologically the patch over the scapula gave the typical picture of Paget's disease and the mole also showed the same histological picture.

DR. HARTZELL, replying to Dr. Hyde's statement in regard to the scarcity of these cases, said he thought he had succeeded in finding all the recorded cases, and that he had added to these a number of unpublished cases. No doubt there were a number unrecorded; but including the four unpublished cases to which he had referred in his paper, he had only been able to find eighteen cases.

Not long ago, Dr. Hartzell said, he had been inclined to agree with Unna that Paget's disease was a disease *sui generis*, but he was now pretty well convinced that it was carcinoma from the beginning; a carcinomatous dermatitis. It was essential he thought, to enlarge our view as to what carcinoma was. There were changes in the epithelium, which preceded for a considerable time the proliferation of the epidermis, and these changes we must regard as carcinomatous, just as we regarded as carcinomatous the overgrowth of the epithelial cells themselves.

RHINOSCLEROMA CURED BY X-RAY TREATMENT.

By S. POLLITZER, M. D.

AT the meeting of the American Dermatological Association held in New York in December, 1905, I presented a case of rhinoscleroma. The patient was a married woman, thirty-seven years old, a native of Czernowitz, Austria. The affection had begun four or five years before, with persistent, dry crusts in the nose following a protracted nasal catarrh. Nasal breathing became gradually more difficult, especially on the left side. About six years ago, shortly after her arrival in this country, a physician excised a tumor from the lower, anterior portion of the left side of the septum. Eight months later the tumor had recurred, was again excised, and this time the surface was thoroughly curetted. This wound did not heal. Three months after the last operation the patient presented herself at the throat and nose department of the German Hospital dispensary in the service of Dr. E. Danziger, to whom I am indebted for a description of the intra-nasal condition, and later for the opportunity of treating the case. There was, at that time, a complete occlusion of the left nasal passage and an ulcer extended from the nasal septum outward and downward about one centimetre over the upper lip. The surface of the ulcer was of reddish-brown color and showed many small whitish points. Its floor was raised, hard, and infiltrated. The ala nasi on the left side was thickened, rigid, and of ivory consistency. On

the right side the septum was infiltrated and covered with small, dry crusts, under which bleeding readily occurred. The right ala was also thickened and rigid and the introitus nasi on that side much narrowed. At my suggestion Dr. Danziger removed a piece of the tumor for histological examination and the diagnosis of rhinoscleroma was confirmed.

For the purpose of restoring nasal breathing Dr. Danziger removed a large portion of the intra-nasal mass on both sides and introduced a perforated splint (Ash) which the patient carried for three months, with very marked relief in breathing. The ulcerated surfaces, however, did not heal, though the process did not extend any farther on the cartilaginous septum. As no further improvement was to be expected from surgical treatment and the patient found the necessity for the frequent removal of the splints for cleansing purposes an intolerable burden, and having in mind, furthermore, the hitherto hopeless prognosis in this malady, I proposed to Dr. Danziger to try the effect of a course of X-ray treatment.

I was not aware at that time that the X-ray had already been used in the treatment of rhinoscleroma; a subsequent review of the literature showed me that a number of attempts in this direction had been made. Ranzi* showed a case before the Medical Society of Vienna, in October, 1904, in which he had achieved a marked improvement after five and a half months' treatment with the X-ray; the external infiltrations had disappeared; the intra-nasal and laryngeal masses were still under treatment. He referred to two cases which Fittig, in Breslau, reported as improved under X-ray treatment. Freund† showed a case before the same society in June, 1905, in which under Roentgen treatment the tumors had been reduced to a small infiltration. Kahler‡ showed a case at the Vienna Laryngological Society which had improved under X-ray treatment. Schein,** in Budapest, reported a case in which the external nasal tumor had disappeared after twelve exposures, the laryngeal masses, however, remaining unchanged. Von Navratil †† showed a case before the Hungarian Society of Laryngologists and Otologists in April, 1905, in which the rhinoscleroma was markedly improved after five months of treatment.

* *Fortschr. a. d. Geb. d. Röntg.*, iii., p. 284.

† *Wien. klin. Wchnschr.*, 1905, p. 905.

‡ *Idem.*, No. 32.

** *Budapest. k. orvos. évkönyv.*, 1905, pp. 30-32.

†† *Pest. med.-chir. Presse*, 1905, p. 685.

All of these cases showed a decided improvement under the X-ray treatment, none, however, a complete cure.

The Roentgen treatment of our patient began on the first of May, 1906, and consisted of three exposures per week for three weeks, then two exposures per week for three weeks, and later one exposure per week for four weeks, altogether about twenty exposures. A marked improvement was apparent after two weeks. The tumors at the nasal orifice had disappeared and the patient permanently dispensed with her Ash splint. After six weeks of treatment nothing more was to be seen of the intra-nasal infiltrations; the alæ nasi were soft and pliable. The exposures were made with a medium-hard tube; distance, eight to ten centimetres; duration, five to six minutes. Before each exposure a narrow strip of adhesive plaster was attached at one end to the tip of the nose, the other end being affixed with slight traction to the forehead so as to draw the tip of the nose slightly upward, thereby facilitating the entrance of the rays into the nasal passages and at the same time affording the tip of the nose a slight protection from possible injurious effects of the rays.

I presented this patient at a meeting of the Laryngological Section of the New York Academy of Medicine in October, 1906, and said then: * "Speaking with the reserve essential in a matter in which there is no guiding precedent, I venture to present the patient as a cured case, as it is now three months since she had any X-ray treatment, and there are no signs of a recurrence of the condition."

Since then something over three years have elapsed. Dr. Danziger was kind enough to examine the patient a few months ago and makes the following report: The alæ nasi are soft and normal in appearance; the ulcer on the lip is healed; no induration; a scarcely visible scar. Both nasal passages are free; they have the same oval form which they presented immediately after the surgical intervention. The interior of the nasal cavity presents the picture of a rhinitis sicca with crust formation. The patient says she feels perfectly well and has no difficulty whatever in nasal breathing.

In view of this report I believe I am justified in regarding this patient as cured, and I think, furthermore, that it is the first case of a complete cure of rhinoscleroma.

* *The Laryngoscope*, 1906, p. 964.

A CASE OF LUPUS ANNULARIS.

By RICHARD L. SUTTON, M. D., Kansas City.

THE relative frequency with which lupus vulgaris is encountered among the skin diseases of the United States is given in the statistics of the American Dermatological Association as .433 per cent. The clinical records of the Skin Department at the University Medical College, and the memoranda of cases seen in private practice, show that the disease is even rarer in this locality (comprising less than .27 per cent. of all cutaneous disorders) than the general average above given would indicate.

The example of this affection which I desire to place on record is an unusual one principally because of the peculiar configuration of the lesion. The outline of the affected area is similar to that in Ransom's¹ case, although the course of the disease was different. In Elliot's² patient the primary manifestations appeared after adult age was reached, as in this instance, but the lesions were multiple and were not elevated above the surface of the skin.

PATIENT: A. G., male, tailor, twenty-four years of age, was referred to my service at the University Dispensary by Dr. Benjamin Jacobs, of this city, in June, 1909.

FAMILY HISTORY: The family history is negative so far as tuberculosis and syphilis are concerned. The patient is married, and has two living, healthy children (aged twenty-three months and nine months, respectively). His wife has had no miscarriages.

PERSONAL HISTORY. The patient is a native of Vilna, Russia, and has been a resident of this city for three years. He has never had a venereal disease of any kind. There is no history of any serious illness.

PRESENT ILLNESS: About three years ago he first noticed a small, flat-topped, brownish papule on the outer side of the left thigh. There was no pain nor itching. He paid no attention to the lesion, and it gradually increased in size until it was about 1. cm. in diameter. Its centre then broke down, and some blood and pus were discharged. Healing took place very slowly, and the resulting scar was thin, smooth and atrophic. From this time the diseased area continued to enlarge, healing in the centre

as it progressed at the border. At times the encircling ring would be uniform in width and unbroken, and again it would be more or less irregular, all depending upon the progress of the disease and the rapidity with which cicatrization took place.

EXAMINATION: The patient is a strong, well-nourished man. The hair and nails are not affected. The pupils react well to light, and the other reflexes are normal. The Wassermann test gives a negative result. The lungs are clear. The pulse is strong and regular, and the blood pressure is not increased. The urine has a specific gravity of 1018, and contains neither sugar nor albumin. No glandular enlargement is apparent. There are no scars on the tongue nor buccal mucous membrane.

On the outer side of the right thigh, about half-way between the knee and the hip, there is an oval lesion of the skin, measuring 5 x 8 cm. The centre of the patch has cicatrized, and now is filled with smooth, glistening, scar tissue. The actively inflamed border is made up of closely grouped, deeply seated, dark-red, flat-topped papules, varying in size from a millet seed to the head of a common pin. They are dry, rather soft to the touch, and painless. Under the dioscope, the skin appears uniformly pigmented, the interpapular spaces being of the same brownish color as the papules themselves. When quite heavy pressure is applied, however, only the nodules show pigmentation. There is no crusting, and the entire patch is perfectly dry.

HISTOLOGICAL EXAMINATION: Sections cut from a small portion of tissue which was excised from the outer edge of the lesion typically exhibit the histologic features of *lupus vulgaris*. Some of the giant cells contain tubercle bacilli, but the organisms are not plentiful, and cannot be found at all in many of the sections.

TREATMENT: When the patient learned that the process was tuberculous in origin, he insisted upon having the entire lesion excised. This was done, under ether anaesthesia, by Dr. Jabez N. Jackson, and there has been no recurrence.

I am indebted to Prof. Leslie B. Miller, of the Department of Pathology, for the preparation of several microscopical preparations of the affected tissue.

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1. RANSOM: *Jour. Cutan. Dis.*, 1895, p. 269.
2. ELLIOT: *Jour. Cutan. Dis.*, 1896, p. 476.

PLATE XLVIII.—To Illustrate Article by Dr. R. L. SUTTON.



FIG. 2.



FIG. 1.

A CASE OF LARVA MIGRANS.

By MARCUS HAASE, M. D., Memphis.

Professor of Dermatology and Syphilology, College of Physicians and Surgeons
(University of Memphis).

J. L., an anæmic female white child, six years of age, was seen by me on August 14, 1909, when I obtained the following history:

On June 12, 1909, a pinhead-sized papule appeared immediately above and over the metatarso-phalangeal junctions of the second and third toes. On June 15th, a similar lesion was observed on the right foot over the second phalanx of the large toe. At this time the lesion on the left foot had extended an inch and one-half upward and backward, and from this time to the date the first photograph was taken its course was as follows:

It extended upward and backward in the middle line in a serpiginous manner until it reached the tarso-metatarsal junction, when it became dormant. This took about three weeks. It then remained quiescent for ten days, when it became active, turned upon itself and extended downward and outward in an irregular course to the fifth metatarso-phalangeal articulation, and then progressed outward from this point and extended to the plantar surface of the foot, where its progress was slower and in a more direct line. It then extended backward and inward across the plantar surface of the foot until it reached the inner surface, about two inches posterior to the tubercle on the first metatarsal bone; then taking an upward direction it again reached the dorsum of the foot. The route taken from here was downward and outward to a point just behind the metatarso-phalangeal junction of the fourth toe. From this point it continued downward and inward to the second phalanx of the third toe, thence upward and inward across the second toe to the inner surface of the metatarso-phalangeal junction of the second toe, thence upward and backward in a very irregular course, to a point just external to the tuberosity on the inner surface of the internal cuneiform bone. At this time the first photograph was taken (Fig. 1). On August 17th, a second photograph was made, and the larva had progressed two and three-eights inches upward

and outward across the foot, and in its course forming a complete ring (Fig. 2). From here its course was downward and outward until it reached the fifth tarso-metatarsal articulation, where it ceased to progress.

The larva on the right foot became active two days after the lesion first made its appearance and moved toward the outer side of the foot; its course thereafter was entirely over the anterior half of the foot and it had been inactive for three or four days prior to my seeing it, lineal snarls remaining to show the course it had pursued (Fig. 3).

The case occurred in Columbus, Miss., about one hundred and fifty miles north of the Gulf coast.

Neither larva was ever active during the child's waking hours, its progress only being noted after a night's rest.

Heroic treatment was opposed by the parents of the patient and by the paediatrician, under whose care the child was at that time for some intestinal trouble. A two per cent. carbolized Lassar's paste was applied to relieve itching, and in the opinion of the writer it had no other remedial effect.

A PIPETTE PUMP FOR THE WASSERMANN-NEISSE-BRUCK SERUM DIAGNOSIS FOR SYPHILIS AND GENERAL LABORATORY WORK.

By CHARLES WOOD McMURTRY, M. D., New York.

THE ordinary glass pipette as used for laboratory work has always been an instrument of relative precision only, as accuracy in its use depends almost entirely upon the skill of the operator using it and his willingness to observe with unremitting care the exactitude of each volume of fluid distributed by the pipette. When the pipette is used for a large number of tests or when the operator is hurried in his work, the personal equation comes to the front and, even in the case of well-trained and conscientious workers, less care is used in sucking up the fluid into the pipette by the mouth and in allowing the fluid to escape by release of the vacuum by the forefinger on the top of the pipette. In this manner the practical value of such important diagnostic methods as the Wassermann reaction for syphilis is often largely dependent upon the technique of the operator making the test.

PLATE XLIX.—To Illustrate Article by DR. MARCUS HAASE.



FIG. III.



FIG. II.



FIG. I.

The pipette pump is a modern instrument designed to make accurate work with the pipette easy. The practical advantages of the pipette pump may be resumed as follows:

I. GREATER ACCURACY is possible owing to the fact that the pipette with the pump may be so held that the graduations, in filling as well as in distributing, are clearly seen by the operator. Furthermore, as the operation of the pump is purely mechanical it can be easily controlled with an exactitude impossible* to obtain by the mouth suction and forefinger release method.

II. INCREASED RAPIDITY in accurate work is possible owing to the surprising ease with which the pump can be manipulated. This applies particularly to the distribution of small quantities of fluid into a large number of test tubes or other receptacles.

III. GREATER ECONOMY. This will be particularly noticed when using the pipettes of 1 cc. and 0.1 cc. capacity for small quantities of fluid—human sera, for instance—difficult to obtain. Here the pipette may be filled in an instant with the exact amount required and the fluid distributed in minute quantities accurately and without the loss of a drop. When working with fluids having an easily disturbed sediment or precipitate, the clear fluid may be drawn off easily and safely down to the top of the sediment or precipitate without risk of disturbing the latter.

IV. CLEANLINESS AND SAFETY. The use of the sterilizable pipette pump eliminates the possibility of infecting a steril fluid (culture media, etc.) from the operator's mouth. Inversely, it removes the often disgusting and frequently dangerous possibility of material drawn into the pipette reaching the operator's mouth. This will be appreciated by serologists and bacteriologists.

The idea of a pipette pump is not new. Various writers have recommended different substitutes for suction by the mouth in filling pipettes. Rubber dropper caps, tubes and balls have been

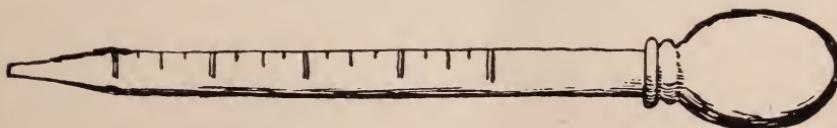


FIG. 1.

suggested and used (Figs. 1-2), and quite recently Professor Kitt

of Munich recommended a pipette with a soft rubber cap stretched

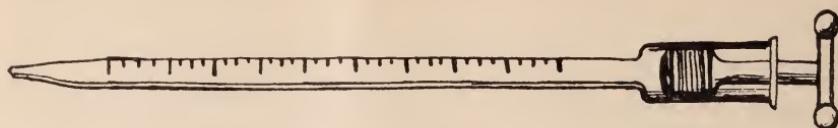


FIG. 2.

across the expanded upper end (Fig. 3). As far as the writer has been able to learn, the idea of attaching a metal syring barrel

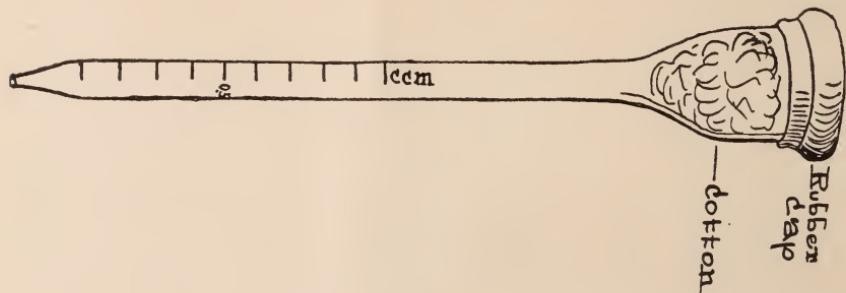


FIG. 3.

to the laboratory pipette to produce suction belongs to Dr. Woithe, whose practical and most useful pump is shown in figure 4. This pump possesses two important disadvantages which the writer has overcome in his own model. The pipette pump of Dr. Woithe can

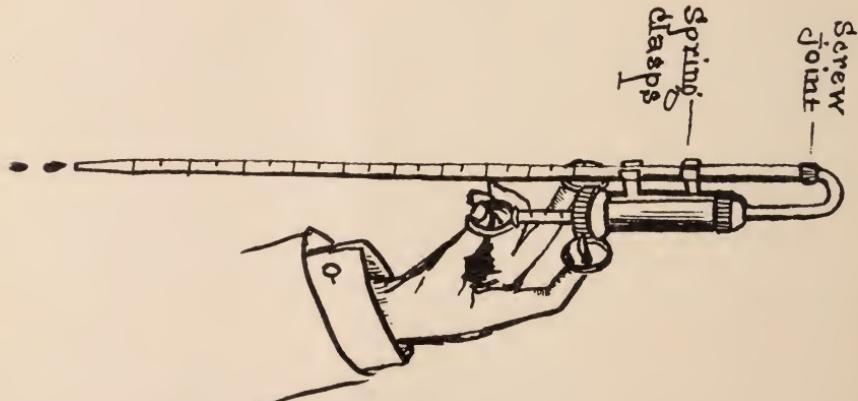


FIG. 4.

be used only with pipettes fitted with metallic screw tops for attachment to the pump. Furthermore, owing to the manner in

which the pump must be held in the hand when used for measuring, the other hand must be used to steady the pipette and render possible the reading of the centimetre scale.

The writer claims the following advantages for the pipette pump designed by him (Fig. 5) :

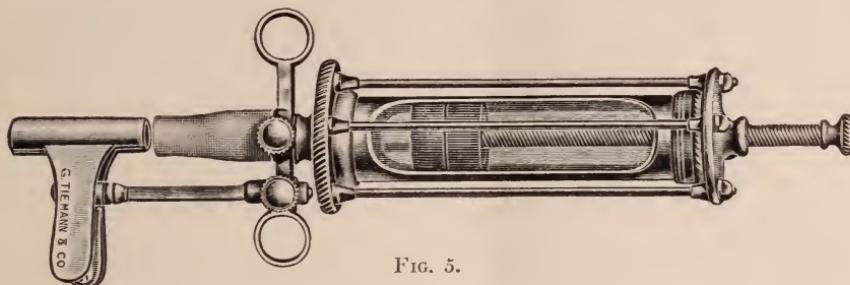


FIG. 5.

I. The pump may be attached instantly to any glass pipette of ordinary size and shape. The removal of a pipette from the pump and the insertion of another may be done in a moment (Fig. 6).



FIG. 6.

II. The pump is so designed that it may be easily and steadily held in and manipulated by *one* hand thus leaving the other free to pick up, hold and replace bottles, etc., into which the fluid contained in the pipette is to be measured, (Fig. 7).

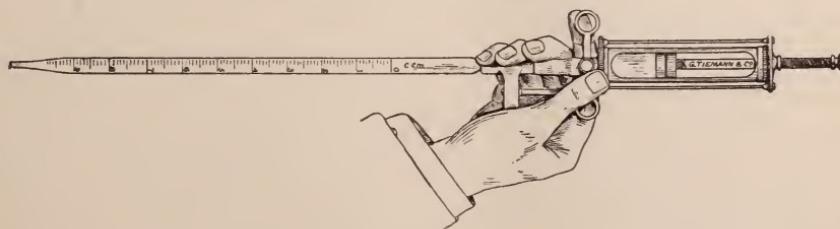


FIG. 7.

III. When the piston and rubber tubing for the joint are kept in good condition, the vacuum of the pipette pump is so reliable that fluid may be held in the pipette for some time and carried in this manner from one room to another without danger of leakage as is the case with the ordinary pipette.

IV. On account of the steadiness with which the pipette and pump can be held and the suction controlled, the pipette is particularly adapted to draining off the clear portion of fluids (sera, etc.) containing sediment.

V. The pipette pump is simple in construction, not liable to derangement or breakage and may be readily dismounted for sterilizing, cleaning or adjustment when necessary. Its construction is such as to permit of repeated sterilization without injury to the working parts.

From personal experience the writer can strongly recommend this pipette pump to those interested in serological work. In the Wassermann-Neisser-Bruck complement test for syphilis it will be found particularly serviceable. Dr. Howard Fox and Dr. Hideyo Noguchi, of the Rockefeller Institute, use the author's pipette pump in their laboratory work and have found it of decided value.

In conclusion, the pipette pump should prove useful to the physiologist, the chemist, the pharmacist and in fact all to whom accuracy, combined with ease and rapidity in measuring small quantities of fluid, is a matter of interest.

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SOCIETY TRANSACTIONS.

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, February 22, 1910.

DR. SAMUEL SHERWELL, President.

Raynaud's Disease. Presented by DR. SHERWELL.

Miss B. T. came to the clinic on February 14, 1910, complaining of symptoms referable to the ends of all the fingers of the right hand, and of the index, thumb, and third fingers of the left hand. This had been noticed for three years, but during the past winter had become more severe, the sensations being unbearable when the hands were exposed to cold. There were intense blanching of the surface and pain when the hands were exposed to cold. The patient's general health was good, and the family history was apparently so, so that it seemed probable, at least, that a luetic origin could be excluded. She had been placed upon anti-syphilitic treatment, however, constitutional and local, during the past week, and had already reported considerable improvement.

DR. FORDYCE agreed with the diagnosis.

DR. BRONSON said that there were some points which would excite suspicion against its being Raynaud's disease. It seemed to him by no means a positive case. There was not much pain; asphyxia was not well marked and though the affection had lasted three years there were no signs of gangræne. Possibly it might turn out to be a case of Raynaud's disease, but at present it lacked any determining feature of that disease.

DR. SHERWELL said that the same objections had occurred to him. There was certainly a marked neurotic element. The fingers were perfectly blanched. There were no lesions on the tips of the fingers, such as might be expected, but it seemed to fill the conditions of Raynaud's disease better than anything else, and he was at a loss for a better name to give it. The fact of there being no clubbing nor loss of function in three and a half years seemed to be against it, also the improvement under specific treatment. But the fingers continued to be very cold, and then, whenever the circulation returned they were very red. He wished to have the opinions of others on the case.

Onychogryphosis Congenita. Presented by DR. HOWARD FOX.

The patient was a girl, five years old, born of Russian parents. Her father was living and healthy. Her mother was suffering from pulmonary tuberculosis. A brother and a sister had died of pneumonia,

following measles. Another brother and sister were living and healthy. When eleven months old she suddenly became hoarse and had remained so since then. The hoarseness appeared without apparent cause. When two years of age she suffered from diphtheria. A year later she had a second attack of diphtheria. When about two years old she was seen by Dr. Wm. H. Luckett at Mt. Sinai Hospital, who reported that thorough anti-syphilitic treatment had been given, with absolutely no effect upon the hoarseness nor upon the growth of the nails. The mother stated that the child had had about five attacks of a general eruption consisting of "blisters," lasting as a rule several months.

A few days after birth the mother noticed that the child's nails presented a yellowish appearance. They soon became thickened, and at the end of two months were so noticeably abnormal as to occasion a visit to her physician. But the finger and the toe-nails had always continued to be thickened, though the marked changes of onychogryphosis had only appeared since the past year and a half. During this time she had been kept in an institution where the nails had been allowed to grow and they had never been cut since.

The patient was fairly robust in appearance and of good intelligence. There were no stigmata of hereditary syphilis. The entire skin was somewhat dry and rough, showing on the limbs a moderate keratosis pilaris. There was a fairly well-marked hypertrichosis of the cervical and dorsal regions.

The finger-nails were all symmetrically involved. There was a marked thickening of the entire nail, more marked at the distal half, where the thickness averaged about $3/16$ of an inch. The nails extended from $3/16$ to $1/4$ of an inch beyond the tip of the finger. The proximal half of the nail was fairly smooth and yellowish in color. The distal part was rough, lusterless, friable, transversely ridged and had a brownish to blackish color.

While the finger-nails were markedly hypertrophied, it was only in the toe-nails that the condition of onychogryphosis was present. All of the toe-nails were fairly symmetrically involved. All showed transverse ridges and a discoloration varying from dirty-yellow to brown. In places they were lusterless, in others fairly shiny in appearance. The most marked ram's-horn twist was seen in the two great toe-nails, more marked on the right side. The nails curved backward, forward, and then outward. Similar twists, in three directions, could be seen in the third toe-nail of the right foot, and in the first two toe-nails of the left side. The twisting, where present, was directed inward, toward the great toe. The other toe-nails had been partially broken off, and it was difficult to tell in what direction they were formerly curved. The nails extended from $\frac{1}{4}$ to $\frac{3}{8}$ of an inch beyond the free border of the toes.

Seborrhœal Eczema. Presented by DR. ROBINSON.

The patient had been seen for the first time that afternoon. The arrangement of the lesions was rather different from that usually seen in seborrhœal eczema, being confined to the body and especially the lower half of the posterior surface of the trunk. Some scrapings had been made which would be examined microscopically later. The patient claimed that he had had this condition for eight years, commencing with an attack of "hives." It recurred every winter, when he was wearing heavy clothing. He had very little of it in the summer time.

DR. WINFIELD was inclined to consider it a peculiar case of psoriasis. The man had had lesions on his elbows and knees several times.

DR. JACKSON thought it was one of those cases on the border-line between psoriasis and seborrhœal dermatitis; one would call it psoriasis and another, seborrhœal dermatitis. He himself was inclined to the latter term.

DR. G. H. FOX said that he had always objected to the term of seborrhœal eczema, especially when applied to a condition neither eczematous nor sebaceous. In this case he did not think the diagnosis was either eczema or psoriasis, though it looked more like psoriasis than eczema. He had been criticized for applying the term pityriasis to a disease that was very common, not a hybrid, but a distinct affection resembling psoriasis on the one hand, and eczema on the other. It might occur in macular, circinate or in large patches—often in the axilla and on the groins. One case figured in his atlas under the name of pityriasis diffusa, exactly resembled the present one. This case he would call pityriasis marginata. Pityriasis rosea, Dr. Fox said, was merely one type of this affection. In pityriasis maculata, circinata, marginata and diffusa, we had the same disease, usually in the acute form but occasionally becoming chronic. It was common to find cases presenting all of these lesions—large marginate patches, small circles, and discs. Instead of separating all these types of pityriasis, and describing them as eight or ten different affections, as some would do, it would seem better to class them under one title. This very common disease was very superficial, resembling psoriasis, but never presenting the thickening of the skin, marked scaling, etc. There was no more clinical variation in cases of pityriasis, applying to the disease this old name in place of coining a new one, than there was in eczema or psoriasis. Each disease might be acute or chronic, and present widely different clinical appearances.

DR. FORDYCE said that were it not for the presence of typical psoriasis lesions on the extremities, he would be inclined to agree with the diagnosis of seborrhœic dermatitis. He had frequently seen psoriasis occurring in patients with seborrhœic dermatitis, where the lesions were modified over the chest and back, and where the scales had more of a greasy character than in an ordinary psoriasis. These cases he considered to be psoriasis developing in a patient with an oily seborrhœa, and not cases which were transitional between seborrhœic dermatitis and psoriasis.

DR. BRONSON said that there seemed to be a general disposition to regard the case as one of psoriasis, but it corresponded to no form of psoriasis which he could regard as typical. He called attention to two important features: First, the absence of any well-marked keratosis; and second, the presence of a very decided vascular element, giving it the appearance of an erythematous condition. In psoriasis the keratosis was always a very positive feature, causing a transformation of the entire epidermis; in the present case, even the places

which showed the most marked resemblance to psoriasis, the scales were loose and easily removed, and the patient said that now and then, if he neglected himself, he would be covered with scales, and that they could always be removed with soap and water. Whatever keratosis there was seemed simply a secondary feature and not characteristic. He did not consider it psoriasis. That was as far as he was willing to commit himself.

DR. JOHNSTON said that if he were compelled to give it a name he would be inclined to call it a superficial, subacute, mild form of psoriasis; but every one understood what was meant by a border-line case between seborrhœic dermatitis and psoriasis and there was no need of any special term.

DR. TRIMBLE said that Crocker called a border-line case of this kind seborrhœa psoriasiformis. This title did not help matters, but might be used for convenience at times.

DR. SHERWELL said that it did not strike him as being a psoriasis, but rather as belonging to that class of diseases described by Unna, only not in the usual location. He could not call it psoriasis because it was shaded off—in one particular spot, on the small of the back, it shaded off into the normal structure so that one could hardly tell where the lesion began. He was inclined to consider it a case of dermatitis seborrhœica resembling psoriasis.

DR. ROBINSON said that he had had no opportunity of studying the case, but on a cursory examination he supposed it to be one of seborrhœic eczema of a psoriatic type, but he would have to study it further before determining what it was. He would be inclined to agree with Dr. Johnston and Dr. Jackson that it was a border-line case. It seemed to be very sharply limited, and with a decided keratosis. In one place it was exceedingly superficial, which would be against psoriasis.

Dermatitis Herpetiformis Bullosa. Presented by DR. HOWARD FOX.

The patient was thirty-eight years old, born in Austria. She was the mother of nine living and healthy children. With the exception of an attack of rheumatism in childhood she claimed to have always been well before the present illness began. Eleven months ago she became pregnant and attempted to bring about a miscarriage by taking a hot douche. This was immediately followed by a profuse haemorrhage from the mouth, the blood being coughed up, according to the patient's statement. Two weeks later the eruption appeared and had continued up to the present time. The lesions were first noticed in the axillæ and later on the trunk and extremities. They had always caused more or less severe itching. The eruption gradually increased in extent and was at its height at the close of her pregnancy. About two months after the birth of her child it began to improve.

The eruption was chiefly confined to the abdomen and thighs. It consisted mainly of dried crusts of former bullæ, assuming various circinate and gyrate forms. The circinate lesions apparently arose from a single bulla, which enlarged peripherally and cleared up in the centre. The patient was a small, delicate-looking woman. Her general health, when presented, appeared to be fairly good.

DR. FORDYCE agreed with the diagnosis, and said that there was a very close resemblance between some serious cases of dermatitis herpetiformis and pemphigus.

DR. KINGSBURY agreed with Dr. Fordyce. As the woman had nine children but little importance should be attached to her recent gestation, and the possibility of pemphigus should be considered.

DR. G. H. FOX said that those who saw the case, when presented, for the first time, would not be so likely to term it a case of dermatitis herpetiformis as those who saw it a few months ago.

DR. WINFIELD was inclined to consider it a case that might develop into a pemphigus later.

DR. BRONSON, also, was inclined to agree with the diagnosis, but would like to know more of the relation between the herpes gestationis of Milton and the dermatitis herpetiformis of Duhring. Attention was called to the presence of some comparatively fresh lesions, which had apparently developed since the gestation was over. A bacteriological examination would be interesting.

DR. ROBINSON agreed with the diagnosis of dermatitis herpetiformis, and thought that DR. Bronson would remember a case which they had treated once in which the whole face was swollen like a severe case of erysipelas. No one would have made a diagnosis of dermatitis herpetiformis at that time. Since then the patient had had seven or eight attacks of well-marked dermatitis herpetiformis.

DR. SHERWELL said that he had had a very distinct and good case occurring after parturition some thirty years ago, and which had recovered, very much as this woman seemed to be doing. It was attended with the formation of bullæ, as described by DR. Fox, and under the same conditions. He believed it to be due to some uterine toxin.

DR. HOWARD FOX said that no bacteriological examination had been made. He thought that most of the bullæ would be found to be sterile. This had been the result of his examination in a somewhat similar case of bullous dermatitis herpetiformis.

DR. WINFIELD said that in the case he spoke of culture examinations were made and they were sometimes sterile and sometimes contained staphylococcus.

Lichen Planus in a Negress. Presented by DR. HOWARD FOX.

The patient was fifty-five years old, born in the United States. She had suffered from two previous attacks, which she claimed were similar to the present one, and which lasted about a year. The present attack began about six months ago. There were, when presented, only a few typical lichen planus lesions upon the arms and trunk. The greater portion of the eruption consisted of pigmentation, which was especially profuse over the buttocks and thighs. No lesions had been seen in the mouth. Under treatment with protiodide of mercury the improvement had been rapid and pronounced.

DR. JACKSON said that the case had changed very much in the last few weeks. When first seen at the clinic, there was a large number of typical lichen planus papules. Pigmentation, markedly black, had taken their places.

Pityriasis Rubra Pilaris. Presented by DR. JACKSON.

The patient was a colored woman thirty-two years of age. She stated that she had had a similar attack in childhood, lasting until she was eight years old. She had a second attack when she was twenty years old, which covered her whole body with white scales and lasted about

four months. Her present outbreak began about a month ago. Her scalp first became scaly, and the palms of her hands also. The eruption gradually spread over her trunk and arms, and down to the upper parts of her thighs. Her scalp presented such an appearance as is seen in seborrhœal dermatitis at times, being red and sealy. Both palms showed a marked dryness and scaliness. The face was scaly, especially about the mouth. Over the trunk and arms she had an eruption of small to large pinhead-sized, firm papules, conical in shape, showing a central depression in most of them, filled with a horny plug. The whole papule could be scraped away with the nail, leaving a moist, red base. Some of the lesions were arranged in lines, but there was no definite grouping. On the backs of the hands there were groups of conical papules. Over the backs of some of the first phalanges of the fingers were a few small papules about the hair follicles. The whole eruption was markedly follicular, and so prominent were the lesions that the skin felt rough on passing the hand over it.

DR. DADE agreed with the diagnosis.

DR. BRONSON said that at first one would think of pityriasis rubra pilaris because of the rough, horny character of the papules and their nutmeg-grater feel, but that both in character and distribution the lesions were unlike any pityriasis rubra pilaris he had ever seen. In the latter disease the papules were firm elevations, not easily removed, as in the present case. Moreover, in this case there were no characteristic papules on the backs of the fingers nor on the back of the neck, which were such special sites of predilection in this disease.

DR. ROBINSON agreed with Dr. Bronson. He would call it a keratosis of the follicles, but not a pityriasis rubra pilaris.

DR. HOWARD FOX said that he thought in another month the lesions would change very materially, and that the case would then be more or less characteristic. The same patient had been photographed by his father about twelve years ago when a positive diagnosis of pityriasis rubra pilaris was made. The speaker had exhibited an enlargement of this picture at the International Congress. He considered the scaling of the scalp and ears identical in appearance with the well-known case of Bertha Schmidt, which many of the members had seen.

DR. TRIMBLE said that he did not wish to express an opinion as to the exact nature of the case, but would like to say a word about the many terms—sometimes misleading—used in connection with conditions of this kind. One would hear the terms, lichen pilaris, keratosis pilaris, keratosis follicularis, etc. used to express the same feature of a case. One of the gentlemen, in speaking of the case, had used the term keratosis follicularis. Of course there was nothing in a name, and he understood what the speaker meant to convey—the woman in question had a keratosis and it was follicular—but this term was associated in his mind with Darier's disease, or psorospermosis, and he thought it was generally accepted as such. Many years ago Dr. G. H. Fox had used this term in describing a certain condition of the skin. At that time it was not generally taken up, but since Darier and White had described psorospermosis, it had been adopted as a title for that malady.

DR. JACKSON said that he believed it was as shown, a case of pityriasis rubra pilaris. At the clinic he had read the description of the disease alongside of the patient, and found it to correspond in every particular. He would try and

have her come to the next meeting of the Society, when he believed the disease would be more pronounced.

Marked Macular Syphilide with no Visible Initial Lesion. Presented by DR. FORDYCE.

The patient came to the clinic two weeks ago with a marked roseola, some of the lesions showing the development of central papules. At the same time the patient had a grouped papular eruption on the forehead. He had enlargement of a few of the posterior cervical lymph nodes. A careful search revealed no initial lesion nor any local adenopathy. The Wassermann test gave a positive reaction.

This case was presented to illustrate the difficulty in always finding an initial lesion, and was one of a series of cases seen in the past year with typical secondary rashes without a visible or marked initial lesion. In one instance a group of herpetic vesicles seemed to mark the invasion of the spirochætae; in others no local point of entry could be determined. In all of these cases the Wassermann test was positive and the subsequent developments confirmed the diagnosis of syphilis.

DR. KINGSBURY said that it was a very interesting and rather confusing case. The eruption, however, was in his opinion sufficiently characteristic to warrant a diagnosis of syphilis.

DR. HOWARD FOX did not think the color of the lesions too pinkish for an early case of roseola. A few beginning papules were also to be noted. The strong positive reaction performed by an experienced man would apparently settle the diagnosis.

DR. BRONSON expressed his doubts about the syphilitic character of the case. He could not understand its lasting so long without showing some characteristic papular infiltration. There were papular lesions present, but they were not like the papular lesions of syphilis. Though slightly elevated, they were not infiltrated and firm like the distinctive papules of syphilis; and the absence of any corroborative lesions, whether of mucous membrane or the lymphatics, would also throw considerable doubt on the case.

DR. DALE said that it resembled a drug rash more than anything else.

DR. HOLDER agreed with Dr. Bronson.

DR. G. H. FOX said that there were two strong arguments in favor of syphilis, first the positive Wassermann reaction, and then Dr. Fordyce's diagnosis. He was, however, inclined to agree with Drs. Dade, Holder, and Bronson that the eruption was not syphilis. The absence of any general glandular involvement, the absence of mucous membrane lesions, and the non-existence of an initial lesion would lead to serious doubt. Moreover, the man had had grippe, for three weeks had taken medicine, and immediately after that the eruption appeared. It might possibly be a dermatitis medicamentosa rather than a syphilitic eruption. Dr. Fox suggested that the man be put upon strict diet without mercury for a month, and see if the condition disappeared.

DR. TRIMBLE agreed with Dr. Fordyce's diagnosis of macular syphilide. The positive Wassermann reaction was almost conclusive. The fact that the patient was a man and that one could not find the initial lesion injected an element of doubt in the case, but in women when an initial lesion could not be located this element of doubt did not disturb us very much. The fact that he had had

the eruption for a month could be accounted for by calling it a relapsing syphilitide. It might have disappeared somewhat and then returned. That did occur sometimes.

DR. SHERWELL said that he was just about to say what Dr. Trimble had remarked—that frequently no initial lesion was found in women, especially when it occurred about the tongue or teeth. While the condition very much resembled a syphilitic eruption, yet he himself once had a patient with an eruption so similar to this one that at first he thought it was the same thing. It was a characteristic case of Gibert's disease, but perverse and long-continued. He had been given a tremendous amount of specific treatment without effect; he improved, however, under simple tonic treatment after a while. It was universal, as in this case, red, and on the forehead. It appeared first on the sides of the abdomen, just as Gibert's disease so often begins, and remained some time.

DR. FORDYCE said if the patient could be seen by daylight he believed that all of the members would agree with the diagnosis he had made, but by artificial light color distinctions were not so easily made out. It was very unsafe to exclude syphilis because of the absence of any one feature, such as enlarged lymph nodes, because in a number of cases he had found a well-developed macular eruption with little or no involvement of the lymph nodes. In these exceptional cases we might later find adenopathy. The patient under consideration, Dr. Fordyce said, would be carefully observed, and a subsequent report made.

Malignant Tumor, Epithelioma (?). Presented by DR. SHERWELL.

Mr. G. T., aged fifty, born in the United States. The tumor covered the right orbit and lid, inner side, and the nose and cheek. The lesion first appeared eleven years ago as an excrescence on the right side of the nose near the orbit. It had gradually extended, in spite of treatment, until it invaded the parts named. In clinical appearance it seemed to be a frank epithelioma, but on operation it was found to be harder and tougher in character than usual, in that respect simulating schirrus carcinoma. The first treatment was received in Chicago four or five years after its first appearance, and was surgical in character. Recurrence followed very soon, and the operation was repeated, again followed soon by recurrence. Afterward the patient himself adopted some form of treatment, consisting of incision and use of caustics, many times repeated, without lasting effect. After consulting various medical men but receiving no treatment, he went to the Vanderbilt Clinic a year ago, where he was treated with solid carbon dioxide; but being dissatisfied with the progress made, he came to Dr. Sherwell's clinic and was treated by curettage and applications of acid nitrate of mercury on the 17th of February.

The patient was simply presented to show the results of operation to date, and the hard, firm scab resulting.

As to the pain, he suffered none. Before operation he was given an injection of morphine and atropine, and again when he was recovering from the effects of the ether.

DR. ROBINSON said that he did not know how well the case would look two months' from the time of presentation, but that the disease would certainly reappear. It would heal over and seem to be all right, but in a year, more or less, it would be found to be still deeper down. It could not be cured.

Tuberculous Ulcer of the Tongue. Presented by DR. TRIMBLE.

Dr. Trimble first presented a photograph of a man who had been referred to him by Dr. Messenger. The lesion was about the size of a twenty-five-cent piece, yellow in color, superficial, and had a tendency to slope off into the healthy tissue. It was located on the left side of the tongue, about three-quarters of an inch back from the tip, and was of six months' duration. The patient also had a severe laryngitis; his voice could not be raised above a whisper, and this condition had existed for four months. There was no history nor sign of any previous venereal trouble. No clinical evidence of pulmonary tuberculosis could be made out. Tubercle bacilli, however, were demonstrated in the sputum. There had been no improvement in the ulcer after seven months of anti-luetic treatment. He had intended to try the Wassermann test, but unfortunately death intervened.

Dr. Trimble also presented an adult male, with an ulcerating lesion involving both sides of the tongue, anteriorly. The ulceration was irregular in outline, and not very deep, and was yellow in color. The duration was eighteen months. Absolutely no venereal history nor any sign of previous luetic trouble was obtainable. No benefit was derived by the use of mercury as a therapeutic test. The Wassermann test was doubtful. The inhibition of haemolysis was probably not complete. When the patient first presented himself at the Skin and Cancer Hospital he was put on "mixed treatment," and then on iodide alone, and then he was placed on the injection treatment, which was being continued. A biopsy had been made, and the report from the laboratory was that it was probably tuberculosis of the tongue. Later, smears were made from the ulcer, but the bacilli could not be demonstrated.

DR. FORDYCE agreed with the diagnosis, but said that from the clinical appearance it would be difficult to differentiate it from syphilis. He thought the patient should have further anti-syphilitic treatment.

DR. HOWARD FOX said that it would be practically impossible to tell clinically whether the case were one of syphilis or tuberculosis. A conclusive test, he thought, would be afforded by subcutaneous inoculation of a guinea pig.

DR. ROBINSON said that the rarity of primary tuberculosis of the tongue must be considered. There did not seem to be enough vascular granular base, such as one usually saw in tuberculosis of the tongue and, in addition, there were no tubercles just beyond the ulcerated area. That, together with the absence of tuberculosis in any other part of the body, would cause him to hesitate about making the diagnosis of tuberculosis. Most of these cases of tuberculosis of the tongue were secondary and were supposed to die within two and a half or three years.

DR. FORDYCE referred to a case of tuberculosis of the tongue which he had seen and which he had diagnosed as epithelioma. The patient had no characteristic tuberculous lesions at the margin, but on the contrary he had quite a marked epithelial hyperplasia which gave the impression of an epithelioma. It was excised along with the connecting lymph nodes. The entire process was found to be tuberculous and afterward the patient developed generalized tuberculosis.

DR. TRIMBLE said that it would seem that a man who had been treated with mercury and potash three times a day for eight months would react somewhat if it were specific. The diagnosis, of course, could not be determined clinically. The pathologist had made a diagnosis of probable tuberculosis, and he thought the lesion clinically resembled tuberculosis more than it did syphilis. The examination would be pushed still further, but he was strongly of the opinion that the ulcer was tuberculous. The first case had died within six months from the time that the ulcer first appeared, and he was inclined to believe the second case would not last long.

Molluscum Fibrosum. Presented by DR. WINFIELD.

Dr. Winfield said that this was one of three cases which he had hoped to present at this meeting of the Society. This case was of two years' duration, and the tumors were increasing very rapidly, more so now than some time ago.

DR. FORDYCE did not think the case a typical one of molluscum fibrosum. The lesions were not the soft fibromata of the molluscum type, but were distinctly hard. The man, furthermore, had not the characteristic mental hebetude.

DR. DADE did not agree with the diagnosis.

DR. TRIMBLE said there seemed to be a great many of these cases just now. He had four cases himself at the present time, one in Dr. Fordyce's clinic, and three others.

DR. WINFIELD said that the case had lost much of its interest from being the only one of a series of three which he had proposed to show. The other cases had lasted for two years, and showed the typical conditions. In both, the mental condition was markedly defective. He had recently read an article by a French neurologist who stated that these cases of fibroma molluscum were symptoms of tumor of the pituitary body, and that was the cause of the brain symptoms.

NEW YORK ACADEMY OF MEDICINE, SECTION ON DERMATOLOGY.

Stated Meeting held January 4, 1910.

SIGMUND POLLITZER, M. D., in the Chair.

Pernio-Like Erythema, with Congenital Heart Disease. Presented by DR. LAPOWSKI.

The patient was a boy, three and one-half years old. No abnormalities were observed during the first five months after birth. The first

changes in color were observed when the boy was six months old; the lips, hands and feet turned bluish and had remained so since. The bluish-red color of both cheeks appeared more than two years ago, and was more marked in cold weather. The patches on the cheeks were round, smooth, sharply defined, and no desquamation had ever been noticed. The fingers and toes were red, slightly swollen, and cold to the touch; the nails and articulations were normal. The lobes of the ears were bluish. The child became tired on the slightest exertion, but otherwise he felt well. The examination of the heart left the diagnosis undecided between an open ductus arteriosus and stenosis of the pulmonary artery.

DR. GOTTHEIL thought the child was suffering from an eczema of the cheeks, aggravated by local hyperæmia due to the heart disease.

DR. ROBINSON thought there was an eczema of the cheeks, and that, to judge by the enlarged abdomen, there was disturbed digestion with absorption of toxic material; and that the flushing of the face was caused by the indigestion and toxæmia rather than by the heart disease. The eruption occupied the flush area of the face.

DR. LAPOWSKI said that he had found no reference in literature to such a congestion of the cheeks in connection with heart disease as appeared in this case. He had found no stomach disturbance, and other physicians who had examined the patient, while noting the enlarged liver and spleen, had noticed no change in the stomach. The skin was quite smooth when first seen and the present roughness was due, apparently, to the application of a calamine lotion.

DR. POLLITZFR said that the redness of the feet and hands, in addition to the face, suggested a central cause, and that therefore Dr. Lapowski's ascription of the process to heart disease seemed not unreasonable.

Atrophy Cutis Maculosa. Presented by DR. GOTTHEIL.

This patient was previously shown before the Manhattan Dermatological Society, December 3, 1909.

DR. LAPOWSKI said that clinically there appeared to be two distinct processes. The small patches showed a distinct loss of substance in the skin, which was not felt in the two larger patches; these were thickened, if anything.

DR. OULMANN said that the two conditions shown by this patient were mentioned by Oppenheim of Vienna, in cases showing first, a loss of elastic tissue with excavation, and later, infiltration of fat into the tissue, restoring the patch to its original level.

Peculiar Scarring of the Back. Presented by DR. TRIMBLE.

This patient had previously been shown before the New York Dermatological Society, November 23, 1909.

DR. ROBINSON said that the eruption on the face was a toxic erythema and not erythematous lupus, as there was no atrophy, no scaling, and no dilated sebaceous orifices.

DR. LAPOWSKI recalled a case presented by him as a peculiar syphilide of

the face. The diagnosis was later changed to lupus erythematosus by another dermatologist; yet the lesions disappeared under injections of calomel. He thought the eruption on the face of this patient was lupus erythematosus, and called attention to the small scars in front of the ears. He believed the scars on the back, on the other hand, were of syphilitic origin. These scars could hardly be the result of scratching, as they were on a part of the body which was difficult of access, while the face, which also was diseased, showed no scratch marks.

DR. LUSK said that on the face there was a toxic erythema. The scars on the back he believed were self-inflicted either by scratching, with resulting pyoderma or by an acid or some other irritant.

Dr. POLLITZER said that there was a history of recurrent attacks of a pruritic disease, which was probably dermatitis herpetiformis. The lesions had been scratched and infected, and the scars were left by the resulting pyoderma. They were marked on the back on account of the greater irritation of the clothing. The eruption on the face was probably a toxic erythema. Lupus erythematosus would not occur in recurrent attacks with entire healing in the intervals, and might be excluded also by the absence of scaling and of horny plugs and particularly of atrophy.

Tuberculide. Presented by DR. LUSK.

This patient, shown before the Section on February 2, 1909, was again presented on account of the marked improvement which had taken place after two months' treatment with pilocarpine.

DR. LAPOWSKI said that he had presented this patient eleven months ago, having then had her under observation for eighteen months. In that time he had seen great improvement under no treatment at all, and he had also seen great improvement under treatment with creosote, externally and internally, followed by relapses while still under the same treatment.

DR. LUSK said that the absence of improvement, under varied treatment, at first, and then the rapid improvement under pilocarpine, led him to ascribe the change to the action of this drug.

Pityriasis Rubra Pilaris of Divergic. Presented by DR. ROBINSON.

This patient was presented before the New York Dermatological Society in December, 1909. The disease began in June, 1909, as an acute, almost eczematous eruption, and within a few months occupied the cutaneous surface.

DR. LAPOWSKI said that he would like to know the result of tuberculin injections, to determine the possible connection with tuberculosis. It was conceivable that the lesions had existed only eight months, as stated by the patient.

DR. POLLITZER said that he had seen this patient in July when the lesions were quite recent, and at that time he thought it an eczema. He agreed now with Dr. Robinson's diagnosis, though it was rare for pityriasis rubra pilaris to occur in a man as old as fifty. He had seen temporary improvement after many different methods of treatment, but a cure was not to be expected from any.

Pigmentary Syphilide and Leucoderma Syphiliticum (Three Cases).

Presented by DR. LAPOWSKI.

In all three cases the lesions occurred on the neck in women. In

all, there were dark, dirty looking areas surrounding millet to pea-sized white patches, usually called leucoderma of the neck. But the development of the discoloration and of the white spots was entirely different, at least clinically, in one of the cases shown. In this patient, who had been watched carefully for six weeks previous to the appearance of the discoloration, there was macroscopically neither redness, thickening, nor desquamation of the skin of the neck, and upon this apparently normal skin the changes in color developed; that is, a primary pigmentary syphilide. In the other cases, the white spots were the remnants of preexisting papules, and the dark discoloration surrounding the white spots developed at the same time.

DR. POLLITZER said that it was a curious fact that the majority (about 80 per cent.) of these cases occurred in women, and usually on exposed parts, and in people whose work exposed them to the sunlight.

DR. GOTTHEIL said that he believed he had seen cases of leucoderma syphiliticum in which the diminution in the pigment occurred independently of any previous lesions.

DR. LAPOWSKI said that Fournier insisted that he had seen such cases of primary pigmented syphilide; that is, cases in which the pigment in the white spots was normal, while in the surrounding areas the pigmentation was increased, and that this was proved microscopically.

CHARLES M. WILLIAMS, M. D.,
Secretary.

PHILADELPHIA DERMATOLOGICAL SOCIETY

January, 10, 1910.

DR. C. N. DAVIS, Presiding.

The regular monthly meeting of the Philadelphia Dermatological Society was held in the Gross Room, of the College of Physicians Building, on January 10, 1910, at 8:30 o'clock.

Premycotic Stage of Mycosis Fungoides. Presented by DR. HARTZELL.

The patient exhibited was a well-built and healthy male of twenty-five years of age. The case had first been observed by Dr. Hartzell some three years ago, at which time there were erythematous patches, sharply marginate, with somewhat yellowish scales, extremely pruritic, situated chiefly on the lower extremities. The eruption first appeared on the outer side of the right leg, attacking the other leg, and then the right arm; the trunk being almost free. The patches were, at the time of presentation, almost stationary, brownish-red in color, of the peculiar shade noticed in premycotic lesions, somewhat infiltrated, with a slightly sealy surface, and pruritic. There were no subcutaneous nodules nor tumor formation.

DR. DAVIS said he thought it was probably seborrhoeic eczema.

DR. STELWAGON said the case was well worth watching, but he was inclined to believe that it was an eczema, although one patch resembled markedly the premycosis stage of mycosis fungoides.

DR. HARTZELL said that he was under the impression that it was the erythematous stage of mycosis fungoides, the color of the lesions being almost the exact counterpart of a fatal case of this disease that Dr. Knowles and himself had recently seen.

Paget's Disease of the Glans Penis. Presented by DR. DAVIS.

The patient exhibited was a male of seventy years, in the best of health. Two years ago a small eczema-like patch was noticed by the patient at the meatus of the penis, this lesion was sharply marginate, and gradually but slowly spread. There had been no inconvenience at any time, excepting after some weeks of rather severe X-ray treatment when a mild radiodermatitis developed. When presented, almost one-half of the glans penis was involved by a sharply marginate patch, of irregular shape, radiating from the meatus, chiefly on the right side, glazed in appearance, with a raw and oozing surface, and a mucoid discharge. There were two pinhead-sized nodules near the meatus. The inguinal glands were not enlarged. There was slight tenderness on pressure. The condition had remained practically stationary during the last few months, mild local treatment, resorein and salicylic acid, each six grains to the ounce of lead plaster and vaseline, having been employed. The patient had refused a biopsy.

DR. STELWAGON said that he thought the clinical appearance was quite characteristic of the disease.

DR. HARTZELL said that he thought the case was a clear example of Paget's disease. He said that Paget's disease of the nipple was probably carcinoma from the beginning and not secondary to carcinoma of the breast. Dr. Hartzell advised treatment with the X-ray.

DR. SCHAMBERG advised treatment with caustic potash.

DR. DAVIS said that some years ago he had had a case of Paget's disease of the scrotum; Dr. Stelwagon referred to that case in his book. He had also seen a patient with Paget's disease of the scrotum in Crocker's clinic in London.

Recurrent Erythema Multiforme. Presented by DR. KNOWLES.

In December of 1905 the patient, a little girl of seven years was first seen, at which time there was a marked eruption, of the iris type, on the dorsal and palmar surfaces of both hands, on the forearms, the face, on the ankles, and on the dorsal and plantar surfaces of both feet. In the same month of the following year the patient was again seen with an attack of the same character. As the patient was in Montreal the next year, at the time an attack was expected, she was referred to Dr. Shepherd. In 1908 another outbreak was observed with the same characteristics. The present attack occurred the latter part of December, both hands, dorsal and palmar surfaces, the forearms, the

face, the lower legs, and the dorsal and plantar aspects of the feet were involved. The lesions were mostly vesicular or bullous, giving the typical iris appearance. According to the patient's history she had had these attacks for the last seven years, always occurring in December; in the Spring, also, a few erythematous spots would appear, lasting but a few days. The outbreaks, starting in December, would run a course of from four to six weeks.

DR. STELWAGON, and also DR. HARTZELL, referred to cases of erythema multiforme with recurrences, the tendency lasting over a long period of years.

Carcinoma of the Skin and Underlying Structures. Presented by DR. PFAHLER.

The patient exhibited was a woman of fifty years, anaemic and somewhat emaciated in appearance. Fourteen months ago an operation was performed for carcinoma of the left breast; four months after the operation a recurrence occurred. When presented there was a hen's-egg-sized tumor growing from the left side of the sternum, with a reddish, somewhat papillomatous surface. This protuberance had been somewhat reduced in size and had become much softer under X-ray treatment. The patient complained of considerable pain, radiating all over the chest and back. There was a fairly well-marked dermatitis from the frequent and prolonged exposures to the Roentgen rays, and a marked bronzing of the surrounding skin from the same source. A leather filter was used in the X-ray exposures. Skiagraphs exhibited distinct mediastinal involvement.

Those present agreed that the X-ray was the only treatment that could be used.

Alopecia Areata Universalis. Presented by DR. SCHAMBERG.

The patient, a boy of seven years, had been entirely bald for two years and seven months; one year ago he came under Dr. Schamberg's care. Arsenic had been given internally and chrysarobin ointment had been thoroughly rubbed into the scalp. When presented over one-half of the hair had returned on the scalp.

DR. SCHAMBERG referred to several cases of alopecia areata following operation.

DR. DAVIS referred to several cases he had had that followed worry and various nervous shocks.

DR. KNOWLES mentioned a case that Dr. Davis and himself had had under their care for three years, a boy of sixteen, who had a complete loss of hair. Two years after the hair fell out, he came under treatment; six months after the start of the treatment half of the hair had regrown; after one year all the hair had returned. One year later there was again a complete alopecia areata; after another year's treatment the hair again entirely returned. A few months ago there was again another complete hair fall; the hair was now growing for the third time. Photographs were taken showing the changes in these various attacks.

Papulo-Necrotic Tuberculide and Acne Necrotica. Presented by DR. SCHAMBERG.

Last August the patient, a woman of twenty-eight years, first came under observation. At that time a deep-seated acne necrotica was diagnosed. On a subsequent visit, small, pinhead-sized nodules were discovered on the eyelids, chiefly the upper, and also on the rims of the ears; these papules had necrotic centres. The case exhibited numerous scars on the cheeks and forehead from the former acne varioliformis, and the other lesions were characteristic of the diagnosed disease. The patient complained of circulatory disturbances of the extremities, the tip of the nose, and of the ears. Dr. Schamberg said that he considered the association of these two conditions extremely interesting.

The unsatisfactory classification of these various conditions was discussed by those present.

Syphilitic Gumma with Surgical Operation. Presented by DR. HARTZELL.

Four years ago a woman of thirty-seven was treated for syphilitic ulcerations of the tip of the nose and of the palate. These lesions healed in a few weeks under anti-syphilitic treatment. One week ago the patient again came under observation with a marked and freely movable swelling of the left cheek, an ill-defined reddened area the size of a quarter-dollar, with a central opening from which pus could be squeezed, being in the centre of this tumor mass. This swelling was first seen by the patient some weeks previously. A scar three inches in length was noticed just below the inferior maxillary bone and extended to the angle of the same. The patient gave a history of having been operated on, at the site of the present scar, for a swelling of five months' duration; probably an undiagnosed syphilitic gumma. Healing progressed remarkably even after the one week's treatment, with five grains of potassium iodide, three times daily.

DR. STELWAGON said that it was surprising that the dermatologist's opinion was not more frequently obtained by the surgeon.

Dystrophia Unguis of all the Nails. Presented by DR. SCHAMBERG.

A woman of forty-six years was exhibited with a pathological condition of all the nails of the hands and feet. Two years ago the present condition started and had progressively become worse. The nails were very thin in texture, particularly at the free edge, the external portion in some having entirely disappeared showing only the nail-bed. They were friable and brittle, and crumbled readily; fissuring was marked. The patient had had cardiac trouble for some years; a murmur could be easily heard at the apex of the heart. There was no derangement of the hair nor of the teeth.

DR. HARTZELL referred to the difficulty in diagnosing some of the nail conditions.

DR. SCHAMBERG referred to a patient he had had with a spoon-shaped, white nail; the condition having been cured by removing the nail.

DR. STELWAGON said that he thought in some of these cases evulsion of the nail improved the condition.

Extensive Epithelioma of the Neck. Presented by DR. PFAHLER.

The patient exhibited was a somewhat emaciated male of fifty-one years. The tumor first appeared five years ago, developing on the left side of the neck in close proximity to the submaxillary bone; the growth reached large proportions. The patient was operated upon last February, for this tumor of the cheek and neck, part of the submaxillary bone being removed. Six weeks after the operation recurrence occurred. During October mercurial cataphoresis was instituted; since then this method had been employed six times; X-ray treatment, which was started some months ago, also being continued. Below the left ear there were palm-sized and smaller, somewhat kidney-shaped, ulcerations, where the last cataphoretic operation was performed; these lesions had a serpiginous arrangement. There was a large area, somewhat papillomatous in appearance, denuded of the epidermis, on the left side of the neck and cheek.

DR. DAVIS said that the character of the ulceration suggested the diagnosis of syphilis.

DR. STELWAGON said that appropriate treatment should be instituted to absolutely eliminate the possibility of syphilis.

DR. SCHAMBERG considered the correct diagnosis was epithelioma, the ulcerations which had given rise to the diagnosis of syphilis having been made by cataphoresis.

Syphilis of a Malignant Type. Presented by DR. DAVIS.

The patient, a male of twenty-eight years, was first seen during the summer of 1908, a few weeks after the appearance of the secondary eruption; the initial lesion appeared in April, infection having occurred in March. The eruption was of the maculo-papular type, but soon became pustulo-crustaceous. When first observed there were numerous scars, three-cent-piece to silver-dollar in size, scattered over the trunk and extremities; active fungating lesions with ulcerations around their circumferences were noted on the wrists, the back, the shoulders, the thighs, and the buttocks. These fungating lesions were from dime to palm in size, with crusts raised from one-half to one inch above the surface of the surrounding skin; considerable ulceration was noticed around each of these lesions. All of the concomitant signs of syphilis were present; the patient was somewhat emaciated and anæmic. The patient during the last year had not been free at any time from active lesions. Treatment had been difficult as very small doses of mercury produced ptyalization. After neglecting treatment for some months, the patient again came for examination; a large ulcerating lesion involved three-quarters of the right side of the scalp, and another lesion of the same

character, palm in size, was noted on the anterior portion of the scalp, extending to the hairy margin. These two lesions involved fully one-half of the scalp.

DR. KNOWLES said that he had pictures showing the various stages of the disease in this patient.

Those present agreed that it was an unusually malignant case of syphilis.

Case for Diagnosis. Presented by DR. SCHAMBERG.

The patient presented was a male of twenty-one years, with an eruption limited to the forearms, that had lasted intermittently for the last two years. The patient was a clothing manufacturer, but always kept his sleeves down while at work. There was a faint papular eruption, pinhead in size, discrete, of a pale reddish, almost pinkish color, and intensely pruritic; there was no tendency to grouping. The papules were somewhat acuminated and some had a slight scale. Soothing lotions had given the most relief, but the condition had remained almost stationary.

Those present suggested either an unusual form of lichen planus or an eczema.

Gangræne of the Skin, Associated with Glycosuria. Presented by DR. SCHAMBERG.

The patient was a male of fifty-nine years, stout and healthy, a freight agent. Because of his work the patient was very much exposed to the cold. Five weeks ago an inflammatory condition developed on the big toe, which had formed a quarter-dollar-sized gangrenous area at the base of the same. The middle and the first toes were reddish in color, chiefly on the dorsal surfaces. There had been a violent drawing pain, as if twine were being pulled into a knot in the toe. Lead water and laudanum had been applied locally, and the X-ray had lessened the pain. The left foot was apparently normal. There was a distinct polyuria, large amounts of urine being passed at short intervals; sleep being frequently interrupted from this cause. Sugar had been found in considerable quantities; the last examination showed 1.68 per cent.

DR. KNOWLES referred to a case of gangræne of the finger, with sugar in the urine, exhibited by Dr. Davis before the American Dermatological Association at the Philadelphia meeting.

FRANK CROZER KNOWLES, M. D.,
Reporter.

CHICAGO DERMATOLOGICAL SOCIETY.

October 15, 1909.

DR. L. C. PARDEE in the Chair.

Lichen Planus of the Oral Cavity. Presented by DR. FOERSTER.

The patient, a man fifty-two years of age, presented lesions of lichen planus on both legs which had existed for the past four years, and which had suddenly increased in number two months ago. Examination of the mucous membranes at that time revealed typical lesions of lichen planus, which had not been noticed by the patient, almost covering the lips, buccal mucous membrane and tongue. The remainder of the body had never been affected. Under protoiodide of mercury the lesions rapidly involuted, and when the patient was exhibited had almost disappeared.

Bullous Impetigo. Presented by DR. PUSEY.

This was the case of a child in which the eruption was only of a few weeks' duration. The lesions at first were clear bullæ, from the size of a pea to a hazel nut, and in their distribution and grouping suggested dermatitis herpetiformis. There was little or no itching and no systemic disturbance.

Psoriasis. Presented by DR. PUSEY.

This was a case of psoriasis affecting the usual parts of the body, but with one unusual lesion. This lesion was on the abdomen, a foot in diameter; it was almost round, with its centre at the navel, but having an area two inches in diameter, including the navel and the surrounding epidermis, the skin of which was entirely normal.

Melanotic Sarcoma. Presented by DR. ANTHONY.

The patient was a man, fifty years old, with a history as follows:

There had been no previous illness; one year ago a small black nodule appeared on the upper surface of the left foot. The nodule was pared down to the level of the skin, leaving an open wound which was thought to be a broken-down gumma by the next physician who saw the case. The wound healed under the administration of mercury.

When first seen, one year ago, a pea-sized, dome-shaped, pearly-white, non-pigmented tumor of cartilaginous hardness was found situated near the scar of the original black nodule; the glands of the groin were enlarged.

Microscopically the small tumor was found to be a spindle-celled melanotic sarcoma. The glands in the groin were excised and presented a jet-black appearance on the cut surface; sections showed the same small round-celled structure as seen in the glands of nævo-melanoma. When

the patient was presented to the Society, the left leg was swollen, somewhat œdematosus, and there were six or eight tumors present. Clinically they presented the appearance of erythema nodosum. They were ill-defined, reddish, slightly sensitive areas of doughy consistency, partially disappearing on pressure. They occupied the anterior and posterior aspects of the leg. When incised, the lesions were found to be subcutaneous, encapsulated, melanotic, spindle-celled sarcomata. New tumors were constantly appearing. The patient suffered from pain and cramps in the leg, but his general health was unimpaired.

Dermatitis Factitia. Presented by DR. ANTHONY.

The patient was an Italian girl, twelve years of age. The eruption had been constantly recurring for the past two years. It consisted of large, well-defined areas of erythema and inflammation of the skin with festooned outlines limited to the parts of the body which were easily accessible.

Dermatitis Verrucosa. Presented by DR. ANTHONY.

The patient was a young man who sustained an insignificant lacerated wound of the hand one year ago. When shown to the Society, there was present a lesion resembling verrucous tuberculosis involving about one-half of the palm of the hand; there was also a small lesion on the neck. Streptococcus and staphylococcus cultures were obtained from the lesions. Bosellini (*Arch. f. Dermat. u. Syph.*, Vol. xvi) Dr. Anthony said had reported a similar case.

Scleroderma in a Girl Five Years of Age. Presented by DR. HYDE.

The family history was negative, except that a brother ten years old was said to have had some cutaneous lesions on one cheek. The parents reported that the patient had had an abnormal skin at birth on the forearms and legs to the knees; the skin was like "cigarette paper." In the last year the condition over the original sites had become worse, and extension had occurred upward to the middle parts of the arms, and to the groins and upper parts of the buttocks and thighs. Itching had been pronounced, and there were some evidences of scratching, especially about the right knee. Otherwise the child had been in good health, though the appetite had been poor. The bowels were regular. The child was a mouth breather and had considerable nasal catarrh; the tonsils were large. The body nourishment was below par; the hands and feet were cold.

The parts involved were: The extensor surfaces of both hands and forearms, extending up half way to the elbows, and on to the flexor surfaces of the forearms to a slight degree with less marked changes. On the lower extremities, the entire cutaneous covering of both legs were involved, with most marked changes on the anterior surfaces, and

extending upward nearly to the groins in front and to the upper part of the buttocks behind. The changes were most marked on the posterior surfaces of the hands and forearms, the anterior surfaces of the legs, and the lateral surfaces of the knees. In these places the skin was inelastic, tending to slight fissuring, mottled white and red, the latter spots being telangiectases. On the parts showing less change, the skin was thin with a glossy "crinkled" look. There were two scar-bands on the lateral surfaces of the right knee.

Case for Diagnosis. Presented by DR. HYDE.

The diseases in question were syphilis and folliculitis. The man, who was thirty-four years old, gave a history of specific infection fifteen years ago. He had received occasional treatment, consisting principally of the iodides. In October, 1909, there developed upon the dorsal and radial surfaces of the hands, groups of pea-sized, dense, purplish nodules, with necrotizing centres.

The clinical resemblance to certain forms of cutaneous tuberculosis was very strong and while the opinions of those present were diverse, the majority seemed to feel that a therapeutic test should be applied by administering heavy doses of the iodides.*

Chronic Urticaria with Pigmentation. Presented by DR. McEWEN.

The patient, Mrs. E., thirty-two years old, was born in Russia, had been married thirteen years and had no children. The eruption had been present on the skin five years, and had been worse during the last two years. The trunk, arms, forearms, and thighs were involved, the lesions consisting of a few papules which had been torn by scratching, and many brownish maculations marking the site of former papules. The patient stated that the lesions would suddenly appear like mosquito bites, itch intensely, and slowly disappear, leaving pigment-spots which would persist for many months.

In the discussion which followed, it developed that the patient had been shown to the Society in April, 1908, by Dr. Schmidt. The opinion prevailed that the condition should be designated as chronic urticaria with pigmentation rather than urticaria pigmentosa.

Xanthelasmaoidea. Presented by DR. FISCHKIN.

The child, a little boy, was fifteen months old. The eruption started in the second month of life, at first on the face and neck, very soon spreading over the body. It was especially dense on the face, neck, and extremities. The eruption consisted mostly of nodules, in size varying from hemp seed to split pea and larger, distinctly and sharply elevated, of a yellow, xanthoma-like color. The child had been

* Since his presentation to the Society, the hand lesions had disappeared under the use of potassium iodide. During the cold weather of December, 1909, pernio-like lesions appeared upon the margins of the ears.

under observation since June, 1909; the majority of the nodules, especially on the neck, had remained without change, though in some places, as upon the forehead and abdomen, they had flattened somewhat and were faded in color. On the abdomen were to be seen a few urticarial areas with dark-brown pigmentation. There was dermographism. The disease was associated with constant and intense itching; otherwise there was nothing abnormal with the child.

ERNEST L. McEWEN, M. D.,
Reporter.

CHICAGO DERMATOLOGICAL SOCIETY.

November 16, 1909.

DR. HENRY G. ANTHONY in the Chair.

Lupus Vulgaris. Presented by DR. HYDE.

The patient was a woman, fifty years of age. The family history showed the presence of tuberculosis in one uncle and one aunt. The personal history was negative except that she had had considerable digestive derangement for a long time, and had been subject for a number of years to epileptiform seizures. The lesion was dime sized, located on the forehead at the root of the nose. It began as a "pimple" which, after treatment with the electric needle, had gradually spread. When shown to the Society, the centre was atrophic and the appearance suggested strongly a patch of erythematous lupus. Diascopic examination showed the presence of characteristic nodules of lupus vulgaris.

Acne Cacheticorum. Presented by DR. HYDE.

The patient, a young man twenty-three years old, had suffered from a facial eruption of acneiform type, more or less continuously for five years. Twice the diagnosis of syphilis had been made. The family history was negative. Immediately preceding the outbreak of the facial trouble (1904), the patient had a severe attack of malaria with jaundice; lesions appeared on the face before the color of the skin had become normal. He had received much treatment through many physicians. In 1908-1909 he suffered much from boils. The first diagnosis of syphilis was made at this time on the condition of the face, and the presence of several "spots" on his shoulders. Under anti-syphilitic treatment the boils disappeared and the acne improved. Later a second diagnosis of syphilis was made, based on the pigmentation of the face and two "spots" within the mouth. There was no history of venereal ex-

posure. When shown to the Society, there was present upon the face and forehead many small, round and oval, superficial scars, with a few acneiform lesions. There were no signs of syphilis to be found.

The concensus of opinion was that the case was one of acne in an individual whose resistance had been greatly reduced, possibly by the malarial attack of 1904.

Rodent Ulcer. Presented by DR. QUINN.

The patient was a laborer, fifty-nine years of age, a native of Ireland. He presented a small, warty growth on the ear of six months' duration and an ulcer on the nose near the inner canthus of the eye, about half an inch in diameter, of one year's duration. On both cheeks were found patches of senile keratosis about half the size of a silver dollar.*

Bromidrosis. Presented by DR. LIEBERTHAL.

The patient, a tailor, twenty-six years old, had been in perfect health up to eighteen months ago when he was operated upon for appendicitis. He recovered from the operation but had suffered since from constipation and bromidrosis. The perspiration had a penetrating odor comparable to that of fresh oil paint. On this account he was unable to retain a position. He complained of no hyperidrosis nor was such to be noted on examination.

* Since the presentation of the case, treatment with X-rays had cleared up the lesion on the ear and nose, and the cheeks were somewhat improved.

ERNEST L. McEWEN, M. D.,

Reporter.

REVIEW
of
DERMATOLOGY AND SYPHILIS.

SYPHILIS OF THE SKIN AND MUCOUS MEMBRANES,
ATROPHIES, HYPERTROPHIES, BENIGN AND
MALIGNANT NEW GROWTHS.

By UDO J. WILE, M. D., New York.

Contribution to the Study of White-Spot Disease. E. RIECKE,
Arch. f. Dermat. u. Syph., 1909, xcix, Nos. 1-2. p. 181.

All the cases of white-spot disease in the literature are carefully analyzed in this paper, in the endeavor to classify them according to their clinical and histological pictures. The vast majority of the cases reported, the author places in the group of circumscribed scleroderma. According to his analysis, the only cases which can stand as examples of true white-spot disease, are those of Westburg, and Johnston and Sherwell, to which he adds the case reported in this article by himself. Common to all these three cases was the deposition of white lesions in an otherwise normal skin, and microscopically, changes consisting in thickening of the horny layer of the epidermis, thinning of the Malpighian layer, and thickening of the papillary and subpapillary layers due to the dense deposition in these layers of horizontally placed connective tissue bundles.

The analysis of the other cases in the literature show, by the presence of atrophies, of concomitant lesions, or by the presence of a violaceous coloration and by various microscopical changes, that they more properly belong to the group of circumscribed scleroderma. He admits, however, that the entity of this disease has not as yet been definitely established, and that the designation, "white-spot disease" is for the present only a provisional name.

Contribution to the Study of the Sebaceous Glands, and the Neoplasms
Arising from Them. KARL REITMANN, *Arch. f. Dermat.
u. Syph.*, 1909, xcix, No. 1. p. 125.

This paper is an extensive review of the subject of hyperplasia, hypertrophy, adenoma, and carcinoma, arising from the sebaceous glands, with the report of the findings in two of the author's cases. As a result of his studies Reitmann concludes that new growths arising primarily from the sebaceous glands occur but seldom, and show little

variability. Such new growth is seen in the so-called "senile hypertrophy of the sebaceous glands," "true hyperplasia," "hyperplasia following inflammatory processes," "nævus sebaceus," and in "adenoma sebaceum"; from all of which processes a carcinomatous change may develop. "Trichoepithelioma" and "epithelioma adenoides cysticum," have nothing to do with the sebaceous glands.

Concerning Senile Angioma and Its Relation to Endothelioma. PICK.
Arch. f. Dermat. u. Syph., 1909, xcix, No. 1, p. 10.

Pick reviews the entire literature concerning the histology of senile angioma and the various theories of the origin of these tumors. His own contribution to the subject consists in the presentation of two very interesting cases. In both instances the patients were elderly individuals, in whom the lesions curiously enough were identically located, namely in the left occipital region. In the one case, the tumors were exclusively limited to this region, in the other, scattered angioma were also present over the body. In both patients the lesions had been present but one or two years, and in both itching was the only subjective symptom noted. The individual lesions differed in no way clinically from the ordinary senile angioma. The author excised pieces from both cases for histological study. In his first case, the histological picture showed nothing unusual, the tumor being made up of newly formed blood vessels and spaces, in short, hypertrophy of the endothelium and proliferation of the latter, leading to the formation of new blood vessels. The second case, though clinically identical with the first, showed an entirely different histological picture and one, according to the author, not previously described in the literature. The cutis was occupied by larger and smaller oval and round blood spaces. The endothelium lining these spaces showed proliferative changes which were more marked in the deeper parts of the tumor. Here, the vessels were lined, not by flat endothelial cells, but by rounded, projecting, polygonal cells which at times were polynuclear. Despite their large size, these cells could still be identified as endothelium. Karyokinesis was present in many of the cells, and in many instances the lumen of the vessel was entirely occluded by the heaping up of layer upon layer of new formed endothelium. Marked invasion of the surrounding connective tissue by the tumor cells was also present, and in many instances evidence of degeneration of the tumor cells was shown by the loss of nuclei and the presence of protoplasmic vacuolation. Pick believes this marked endothelial proliferation and infiltration to be quite different from that found in the so-called endothelioma, nor is it possible to explain it on the basis of an irritative or inflammatory growth, inasmuch as there was not the slightest evidence of inflammation in any of the sections. An analogical picture he was unable to find either in dermatological or in pathological literature. The vacuolar degenera-

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tion of the cells leading eventually to their entire destruction, and the circumscribed character of the tumor itself allows the presumption of its benign nature.

A Contribution to the Study of Lupoid (Boeck). KREN and WEIDENFELD, *Arch. f. Dermat. u. Syph.*, 1909, xcix, No. 1, p. 79.

This study is a complete review of the subject and literature of the benign sarcoid tumors of Boeck, with the report of the findings, by the authors, in a case of their own. The case was studied clinically, histologically and bacteriologically, and the results are embodied in the following conclusions. On account of its great similarity in structure to tuberculosis, and its probable genetic relationship to this disease, the name "lupoid" is preferable to "sarcoid." The eruption is generalized, but with predilection for the face and the extensor surfaces of the extremities, and shows itself as small and large nodules, and diffuse infiltrations of a yellowish-brown color. Scaling and ulceration did not occur in this case. The lesions may be grouped, and by central involution may give rise to an annular configuration. Healing is spontaneous and is followed only by superficial atrophy or a slight scar. The affection is an essentially chronic one. Local reaction with tuberculin does not occur. Innoculation into guinea pigs of lupoid tissue gives negative results for tuberculosis. The histological picture is, except for certain forms of lupus, quite characteristic.

Excellent colored plates, illustrative of the gross and microscopic appearance of the lesions, accompany this paper.

Two Cases of Multiple Myomata of the Skin. WILHELM FRITZ, *Arch. f. Dermat. u. Syph.*, 1909, xcix, No. 1, p. 45.

Two cases are herein described of multiple, smooth muscle tumors of the skin. In both cases the lesions dated from birth and in both, the tumors were painful to pressure. The lesions themselves varied in size from a pea to a hazelnut, they were firm, slightly elevated, and limited entirely to the extensor surfaces of the upper extremities. The histological examination of an excised tumor, in each case, revealed the presence of a new growth limited to the corium and consisting entirely of smooth muscle fibres. The arrectores pili muscles were markedly hypertrophied, and their fibres were intimately blended with those of the new growth. This fact leads the author to believe that the tumor had its origin in the arrectores pili muscles.

Contribution to the Study of Keloids, Together with Remarks Concerning Mongolian Birth-Spots. MAX SCHIRAMEK, *Arch. f. Dermat. u. Syph.*, 1910, xcix, Nos. 1-2, p. 207.

Writing from Riehl's clinic in Vienna, the author discusses at length the old question as to the identity of spontaneous and trau-

matic keloids. There is nothing new in his treatment of this subject. His own contribution consists in the presentation of two children, the mother of whom had numerous spontaneous keloids. On the nates of both children were areas of circumscribed, bluish pigmentation, which had apparently been present since birth, and which corresponded with the so-called "Mongolngeburtsflecke" described by Sabaye, Balz, Epstein, and others, and supposed to be peculiar to the Mongolian races, and when present in others, indicative of the admixture of Mongolian blood. In Schramek's cases Mongolian or Magyar ancestry could not be established. The occurrence in the same family, of hereditary keloids, and "Mongolian-spots" suggests to the author that keloids may be congenital in their origin.

TREATMENT OF SYPHILIS.

BY FAXTON E. GARDNER, M. D., NEW YORK.

Local Changes Caused by Insoluble Mercurial Injections, Especially Those of Gray Oil. S. DOHI, *Dermat. Ztschr.*, 1909, xvi, No. 1.

Dohi reviews the literature and adds the personal examination of specimens obtained from a fatal case, and some experimental work. His histological findings are much like those of his predecessors. (*Pellier, Jour. Cut. Dis.*, Nov., 1909, p. 529, Abstr.).

Practically, we must remember that if entire absorption of the mercury sometimes takes place within four months, metallic mercury in large quantities has still been found in the buttocks after months and years, and that, therefore, we must avoid extreme doses and too frequent injections.

Hæmorrhagic Mercurial Reaction in Early Syphilis. ALEX WACHENFELD, *Ibid.*, p. 29.

The author relates a case of cutaneous reaction of Herxheimer (Buschke, *Jour. Cut. Dis.*, Nov., 1909, p. 528, Abstr.), which took the hæmorrhagic type after the injection of one and one-half grains of mercury salicylate in a man predisposed to bleeding. Also, at the same time, blood appeared in the stools, and jaundice developed. Herxheimer has seen another similar case, without jaundice. Both cases recovered. The purpura-like spots on the legs left pigmented marks for some time.

Abortion of Syphilis by Intensive and Early Treatment. ROBERT DUHOT, *Annales de la Polyclinique Centrale de Bruxelle*, 1909, ix, No. 9, p. 257.

It is now established that in the great majority of cases, it is possible, by an intensive and very early mercurial treatment to do away with the secondary period, and that, under such conditions, tertiarism exists no more. Abortive treatment as understood by Duhot, means that the general spreading of the spirochætae in the organism is prevented, that the disease is confined within a small area, reduced to the chancre and accompanying adenitis, and that no secondary symptoms are detectable by the most thorough investigation.

In order to be successful, abortive treatment must be begun before the twelfth day following the appearance of the chancre; the primary sore must be excised and the glands sterilized, and a method of mercurial treatment must be used that can give a really intensive treatment. The first course of treatment must have the maximum therapeutical effect, without going beyond the resisting power of the body, and must be followed by the chronic and intermittent treatment.

When the treatment is begun after the twelfth day, a complete abortion may sometimes be obtained; but, if encouraging, the results are not as constant as they are when the treatment is begun before the twelfth day. Duhot has confirmed his clinical results by the Wassermann and Noguchi tests. On twelve patients treated before the twelfth day, none ever developed a prolific reaction. When intensive treatment is begun near the time of the appearance of the roseola, it will not prevent the latter, but it will greatly modify the secondary period. The frequency of negative serum reactions is proportional to the intensity of the treatment and early beginning of the first course. If the latter is begun before the twelfth day after the appearance of the chancre, 95% of the cases have no subsequent manifestations of any kind whatsoever.

Of 207 cases of abortive treatment, 97 are now in the tertiary period, the time varying from 4 to 12 years, and not a single case of tertiarism among them.

Late treatment, that is, before administering mercury, waiting for secondaries to appear, must be forever eliminated from medical practice.

Excision of the chancre must be thorough and wide, and the wound left open and daily swabbed with tincture of iodine. Excision of the glands is good, but cannot be included in daily routine work.

Sterilization of the glands is effected by mercurial injections in the vicinity of the glands: diluted gray oil, colloidal mercury, benzoate and biniodide solutions, or mercurial inunctions may be used. Atoxyl, arsacetin, and hectyl, are better tolerated locally, but they are not so efficacious.

All methods, with the exception of ingestion, can be used as an abortive treatment. Duhot employs gray oil injections; calomel is too painful. Soluble injections, preferred by some French writers, require from the patients a regularity they do not always display. Inunctions are more doubtful. Atoxyl cannot abort syphilis.

Duhot injects 14 eg. of mercury in patients weighing 165 pounds, and in good condition; in those weighing 154 pounds, he gives two 14 eg. injections, and 10 to 12 eg. for the following: In those weighing about 144 pounds, 9 or 10 eg.; for those weighing about 132 pounds, 7 eg. The two first injections are given six days apart and the following ones are given once a week. The first course is of 15 injections. Charmeil gives smaller doses, but Duhot believes them insufficient.

After the first course a rest of two months, then a second course, 11 or 12 eg. for 165 pound patients, 9 or 10 for those of 154 pounds, 7 or 8 for those of 144, and 7 for those of 132 pounds. The second course consists of 8 or 10 injections. Then the second rest of 10 weeks. Then a third course of 8 injections with the same doses as the second. Then rests of three months and courses of 8 injections, alternating.

After each course the serum is tested. A treatment of three years, if the sero-diagnosis is negative, seems amply sufficient to Duhot; he even thinks that two years will be enough for those having had a real abortive treatment.

Duhot explains his technique, which does not differ materially from that of others already well known. He injects in the buttocks, and also in the loins. He has made 25,000 injections of gray oil without a single accident. He watches the kidneys, gives two quarts of milk a day, prohibits alcohol, and keeps the mouth strictly clean.

Two Cases of Gangræne of the Skin Following One, an Injection of Benzoate of Mercury, and the Other, an Injection of Gray Oil.

THEBIÈRGE, *Ann. de dermat. et de syph.*, 1908, ix, No. 12, p. 705.

The first case is that of a physician who attempted to inject himself with a carefully prepared solution of benzoate of mercury. He injected it under the skin, and the result was a very slow healing and painful ulcer of the size of a twenty-five-cent piece. This contradicts Gaucher's assertion that benzoate of mercury ought to be injected subcutaneously.

The second case is that of a physician treated for a period of eighteen months with injections of gray oil, and who developed a small slough, on account of a small quantity of gray oil having passed into the subcutaneous tissue through a lateral crack of the needle.

Treatment of Syphilis by Mercurial Inhalations in a Proper Hot Room.

S. SCHIRO, *Med. and Surg. Jour.*, New Orleans, 1909, lxii, No. 5, p. 349.

Campailla's method is termed by Schiro as the method of mercurial dermo-broncho-pulmonary absorption in dry heat with concomitant diaphoresis. Campailla's original apparatus, more than two centuries old, is still in use in the city hospital of Modica, Sicily.

Schiro has had a room built, all brick-work, with tile floor, 6.9x5.3x3.8. There is a glass door in front which opens in a vestibule also provided with a glass door. The room is heated by dry heat—pure heated air coming from a heating apparatus in the lower floor. The hot room floor presents a hole in which can easily be placed, through a side opening, a small brazier for the burning of the mercurial powder, which is given the patient before entering the room. This powder is a mixture of incense and red sulphide of mercury (2 grains for the first inhalation, 4 for the others). A temperature of from 130° to 160° is maintained, according to the individual. Treatments are given every other day or twice a week. Profuse diaphoresis follows each treatment. A course of 10 or 14 treatments begins well the treatment of syphilis. Forty-four cases, some of them not curable by other methods, have yielded satisfactory results.

The treatment is claimed to be more energetic than any other, perfectly harmless, and free from objectionable features.

BOOK REVIEWS.

Serum Diagnosis of Syphilis and the Butyric Acid Test for Syphilis.
By HIDEYO NOGUCHI, M. D., Associated Member of the Rockefeller Institute for Medical Research. 14 Illustrations. *J. B. Lippincott Co., Philadelphia, 1910.*

Noguchi has succeeded in compressing into one hundred and thirty-seven pages a most unusual amount of information about the serum diagnosis of syphilis. In a work of this size it would naturally be impossible to give a complete résumé of all our knowledge of the subject, especially from the standpoint of practical application. In the first few chapters of the book, the writer gives a clear and concise description of the underlying principles of the Wassermann reaction. He then describes the technique of the reaction, discussing his own modification in great detail. The book is certainly an original one, embodying much of the author's previous research in serum diagnosis. It is more especially suited to laboratory workers and students of serology. It is, however, rendered more interesting to those who have only a slight knowledge of the subject by the addition of a most excellent glossary. In the last chapter the author digresses from the main subject and discusses his own butyric acid test. A bibliography of over two hundred selected articles adds considerably to the value of the book.

The first six chapters are devoted to a theoretical consideration of serum haemolysis and of the principles of the phenomena of complement fixation. In chapter two, special attention is called to the quantitative relation existing between complement and amboceptor, an increase in one, say complement, permitting the use of a smaller amount of the other, namely amboceptor. By means of a diagram, Noguchi shows that four times the usual amount of amboceptor requires only one-third as much complement, while twenty units of amboceptor only need one-tenth of a unit of complement to produce an equivalent amount of haemolysis. The writer discusses, in chapter 7, ten different systems of serum diagnosis, depending on the principles of complement fixation. Eight of these systems can be classed together, as they use corpuscles of animals, for which human serum contains unknown and varying amounts of natural haemolytic amboceptor. Noguchi considers that only the systems of Wassermann, Detre, Boas, and Browning are to be recommended. The systems of Bauer, Stern, and Hecht, and more particularly the two methods of Tschernogubow are condemned. A comparative table shows at a glance the particular points of difference between all of the ten methods. In chapter 8, the Noguchi system is discussed in minute detail. This includes the technique of obtaining blood from the patient and of performing the test itself. Full directions are also given for those intending to prepare, standardize, and preserve their own reagents. The more common sources of error and the method of avoiding or remedying them, are taken up in the next chapter. This will be of great interest to those who have had experience in performing the Noguchi test. In chapter 9, the effect of inactivation upon the antibody is discussed and graphically illustrated. The writer has found that the amount of syphilitic antibody in a strong positive case is greatly reduced by heating for twenty minutes even at a temperature as low as 45°C. At 50° it is reduced one-half and at 55° about one-fourth in amount. The rate of destruction of the antibody was found by the writer to have been greatest during the first five minutes, being reduced in this time to $\frac{1}{3}$ of the original

amount. Noguchi has apparently discovered why some observers have obtained positive reactions in non-syphilitic cases, when using active serum. This is due to the use of antigen which contains certain proteins or decomposition products of proteins which, in the presence of active serum, fix the complement and give a false reaction. Noguchi has found that this false reaction does not occur if the antigen employed consists of lipoids that are acetone insoluble. Chapter 10 is devoted to the technique of the regular Wassermann method. Special attention is paid to the preparation of the antigen, nine different methods being described in some detail. These include a consideration of watery extracts, of alcoholic extracts, and the artificial antigens proposed by Sachs and Rondoni and by Schürmann. The practical application of the Wassermann test is discussed in Chapter 11. Thirteen different tables are given, three of which are devoted to a direct comparison of the results obtained by the regular Wassermann and the Noguchi methods. The last chapter describes, at some length, the technique and practical value of the author's butyric acid test in the examination of serum and cerebro-spinal fluid. It is admitted by Noguchi that the test is not specific for syphilis. It is claimed, however, to be of value in confirming the diagnosis of syphilis, based upon clinical symptoms and upon the Wassermann test. A negative reaction is, however, of greater value than the Wassermann test in excluding the presence of syphilis.

The work of the publishers has been most excellent. The paper, printing and binding, as well as the colored illustrations are certainly all that could be desired.

H. F.

Diseases of the Genito-Urinary Organs.

By EDWARD L. KEYES, Jr., M. D., Ph. D. Clinical Professor of Genito-Urinary Surgery, New York Polyclinic Medical School; Surgeon to St. Vincent's Hospital; Lecturer on Surgery, Cornell University Medical School. 975 pp. New York, *D. Appleton and Co.*, 1910.

Text-Book reading is often profitable work, but seldom very interesting. Dr. Keyes' book is an exception. The reading is enjoyable because there is something new and because we have here a volume with strong personal earmarks.

The new feature is the discarding of the time and custom-honored arrangement by one founded on the nature of the lesion. Pathology, no longer anatomy, gives the descriptive unit. To the mind fond of general ideas, the advantages of such a plan are obvious; for, after all, there are only a few pathological reactions taking place in the urinary tract, and the latter is an entirety. Thus, are avoided numerous and tiresome repetitions, and a much better general view of the subject is obtained.

Of course, there are some conditions which are difficult to place because the identity of the reaction provoked by the same cause in different parts of the urinary tract is only true in a broad sense. Thus, for instance, we may be a little surprised to find non-gonorrhœal urethritis (including traumatic, neoplastic, syphilitic, herpetic, urethrorrhœa, prostatorrhœa, and spermatorrhœa) in a place that seemingly makes it a part of gonorrhœa. But these are only minor facts and everything considered, the advantages of the new arrangement far outweigh its drawbacks.

The book begins with the exposition of the principles of urology. Cystoscopy receives the attention it now deserves: 19 pages are devoted to it, double the amount found in some recent treatises, twice as bulky as Dr. Keyes' book. The estimation of the renal function, a chapter of capital importance, fills the next 24 pages, and clear conclusions are drawn from the "babel" of conflicting opinions.

Gonorrhœa comes next and is exhaustively studied in more than 150 pages, as to its medical and social aspects, both in the male and in the female. The study of strictures and prostatic pathology completes the introduction to infections of the upper urinary tract, considered as a whole. Later come the minor chapters on tumors, injuries, and malformations. These, and the diseases of the genital organs are necessarily treated in anatomical order.

The 108 pages devoted to syphilis (which, despite the law of tradition, belongs, in our opinion, to dermatology and not to genito-urinary surgery), give a complete and concise summary of the subject, such as will be found eminently useful by the general practitioner.

And, last, "almost by way of appendix," as says the author in his preface, comes the section on operative surgery. This chapter is clear and complete and up-to-date. Of course, the details of the technique are not all given nor could they all be. As Dr. Keyes says himself, "The purpose of the book is not to make specialists, but to show general practitioners how far they may go themselves, and how much they must rely on the special skill and instruments of the specialist."

Dr. Keyes has read what others have said on his subject, but he does not rely on their findings to make his book; on all subjects, he has his own opinion, and states it clearly; not unmindful of mooted questions, not contemptuous of objection, but knowing that in a book for general use, an opinion based on actual evidence and on common sense has to be given on each question. He gives his opinion clearly, and tersely, and some of his dicta are real gems as, for instance, the following line, giving the entire treatment of spermatorrhœa and prostatorrhœa: "The only cure is common sense, the only relief, matrimony." There are a number of these in the book, and apart from all other reasons, it would be worth while reading, simply to become acquainted with them.

F. E. G.

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SYRINGOMA.*

By OLIVER S. ORMSBY, M. D., Chicago.

THE object of this paper is to record the findings revealed in the study of a case in which the clinical diagnosis of syringocystoma was made. The patient consulted Dr. Hyde in February, 1910, and to him the writer is indebted for the privilege of making this study. Owing to the character of the work undertaken, it has been impossible to complete it in the short time at our disposal; the present report, therefore, is preliminary to a more extended study now in progress. No attempt is made here to classify the recorded cases nor to compare this one with them. A recent report by Schopper¹ on the multiple benign cystic epithelioma group, and another by White² on the syringocystoma group discuss the subject of classification and give complete literature references.

In the mass of literature on this subject, there appear to be two pretty distinct groups of cases which present a sufficient number of common details, both clinically and pathologically, to explain why all have been classed together by most writers.

Dividing the cases into two groups, the most striking points may be enumerated as follows:

In group one, to which the cases of multiple benign cystic epithelioma belong, the disease appears to be hereditary. The lesions begin early in life and often several members of one family are attacked. Here the lesions predominate on the face and head, and

* Read before the 34th Annual Meeting of the American Dermatological Association, Washington, D. C., May 3-5, 1910.

The paper was read under the title of Syringocystoma, but is now recorded under the title of Syringoma, which more nearly agrees with the histological findings. Dr. Hartzell, who examined the sections at the time of the meeting, concurs with this opinion.

¹ SCHOPPER, K. J. "Epithelioma Adenoides Cysticum (Brooke)." *Arch. f. Dermat. u. Syph.*, 1909. xviii. One plate, two figures.

² WHITE, C. J. "Syringocystoma." *Jour. Cut. Dis.*, 1907, xxv, pp. 49-60. Four plates, seven figures. Discussion.

are variously described as nodules of different sizes, whitish, yellowish-red, translucent, etc., in some instances going on to softening and to evolution of true epitheliomata.

Brooke, Fordyce, Hartzell, and others traced the origin of these epithelial growths to the rete and sheath of the hair follicles.

To identify the second group, various terms have been employed according to the conception of the writer as to the point of origin of the affection. The titles named below make this more clear:

Eruptive hydadenoma, adenoid epithelioma of the sweat glands, syringocystoma, hemangio-endothelioma tuberosum multiplex, lymphangioma tuberosum multiplex, syringo-cystadenoma, syringadenoma, syringoma, cystic eruptive epithelial celluloma, cystic epithelial nævi, nævi cyst-epitheliomatosi disseminati, etc.

In the majority of these cases the lesions occur often on the trunk. Heredity plays no part. The lesions vary much in color, size, and shape, but are nodules and perhaps much softer in consistency than those described in the first group. In the latter, the sweat glands, ducts, lymph and blood vessels in many cases have been thought to be the points of origin of the growths.

The chief changes recorded include production of epithelial or endothelial masses in the corium occurring as bands of cells, either single or branching, or as epithelial buds extending from a common centre with cysts of varying sizes; in certain instances strong presumptive evidence of their connection with the sweat apparatus has been advanced. In a recent report, Dr. C. J. White places a case fully reported by himself, in the second group, regarding the sweat apparatus as the point of origin and giving the following as his reasons:

"Clinically, the secretion of sweat in the affected areas is lessened; and pathologically, the changes appear to be due to a new growth and to cystic dilatation of the sweat ducts or, as stated in other words, the growths as demonstrated by his sections are hypertrophic and hyperplastic elements of previously existing efferent sweat ducts." This case is grouped with five others in literature as clinically similar and the entire group as wholly different from multiple benign cystic epithelioma.

In the discussion of a paper read before the Sixth International Dermatological Congress by Heidingsfeld¹ on multiple benign cystic epithelioma, Dr. Hartzell stated that in the majority of cases, the

¹ *Tr. 6th Internat. Dermat. Cong. 1907, p. 197.*

origin of the epithelial process could be traced to the hair follicles; that no one had succeeded in showing a connection between these long, slender, duct-like tracts and the sweat glands; that practically these two processes (multiple benign cystic epithelioma and syringocystoma), which clinically were much alike, but showed some pathological differences, were examples of the same disease and due to an abnormal increase in epithelium, in both instances having their origin in the hair follicles.

In continuing the discussion, Dr. Grindon preferred to keep the two distinct on clinical grounds, the former group he called the Perry-Brooke-Fordyce type; the second group being represented by the cases of Jacquet, Darier, and others.

Crocker² divides the cases under discussion into two groups and describes the points of distinction and resemblance between the members as a whole, but admits the close resemblance that the cases of each type bear to one another.

In a study of the entire number of cases of both groups which are now classified by most writers as identical, the following points are significant:

First, the lesions may be single, few, or many; in the latter event they may occur in large numbers and be widely disseminated.

Second, they may occur on any part of the body except, perhaps, the palms and soles; but the face, nose, eyelids, and the upper and anterior parts of the trunk are points of election.

Third, the lesions are papules, nodules, or tumors.

Fourth, they may be of the normal color of the skin or variously colored: reddish, pinkish, brownish, bluish, or in combinations of these colors; and they may be translucent.

Fifth, they may be comparatively superficial or quite deeply situated; they are soft or quite hard; some have associated telangiectases and are often ulcerated.

Sixth, many are of hereditary origin, while it is equally true that others furnish no such history. The former begin early in life and attack several members of a family, while the latter occur more frequently about puberty.

Seventh, none has shown a tendency to resolve and disappear, while all writers agree that they are tumor formations.

- In view of the diversified descriptions and opinions above suggested, the following case is of interest:

² CROCKER. *Diseases of the Skin*, 3rd ed., 1903, p. 985.

CLINICAL DESCRIPTION. The subject of this report is an unmarried woman twenty-three years of age. Her weight is 145 pounds and aside from the disfigurement produced by the lesions, appears to be in good physical condition. She is attending a normal school and, further, is actively training in physical culture. Her family and personal history present nothing of importance relative to the present disorder.

The cutaneous affection began in February, 1909, with the appearance of an eruption first about the elbows. Some months before, she noticed some pruritus in this region which she attributed to the "itch," as several school children under her charge were suffering from this malady.

From the elbows the eruption spread up and down the arms and forearms and thence to other parts. It had been spreading rapidly and increasing in its individual elements for the past five months. The eruption produced no subjective sensations.

GENERAL SYMPTOMS. Her general health has been good. Her weight was normal and all the functions were normal except two: first, she had ceased to perspire in the affected areas and as these were extensive, she had practically ceased to perspire even when performing very active exercise incident to the physical culture training; second, she has had to rise from bed several times each night in order to urinate, but she thinks the quantity voided not excessive. An ordinary urinary examination revealed nothing abnormal.

Report of blood examination made April 22, 1910, by Dr. Wadsworth at the Presbyterian Hospital: Erythrocytes, 4,600,000; white cells, 9000; haemoglobin (Dare), 85%. Differential count: Polymorphonuclear neutrophiles, 63%; small mononuclear lymphocytes, 34%; large mononuclear lymphocytes, 1%; transition cells, 1%; polymorphonuclear eosinophiles, 1%.

LESIONS. On examination the lesions were found to be nodules of various sizes and colors. They were situated in greatest abundance over the breasts, arms, forearms, face, eyelids, thighs, and legs (Figs. 1, 2, 3, and 4). On the limbs the extensor surfaces were more considerably involved. The lesions were very numerous over the breasts and over the extensor surfaces of all the limbs. There were, however, many on the flexor surfaces and a few on the back, especially over the buttocks and on the upper part of the trunk around the shoulders. The palms, soles, and scalp were free.

ANATOMICAL LOCATION. Some lesions were fairly superficial and

flat; others were deeper and not flat; while many were quite deep. Large numbers occurred as discrete nodules; others coalesced and formed lobulated plaques. On the arms the nodules were flattish, yellowish-brown, appearing much like xanthomatous lesions. Similar growths occurred on the forearms, but here many were smaller, having only the normal hue of the skin. On the lower limbs where they were numerous, the color varied; some were bluish-red, brownish-red, or yellowish-red. In general, much more color was exhibited here than elsewhere. Over the breasts the color was pinkish and darker red. Over the neck and face large numbers were colorless. On the eyelids much deformity was produced by the protuberance of the nodules. Here some appeared translucent and some resembled fibromata.

SIZE AND SHAPE. All lesions were nodular, some flat, others oval or roundish. The larger could be distinctly felt extending somewhat deeply into the hypoderm. In size they varied from millet-seed to pea-sized and slightly larger. Where plaques had formed, these presented a lobulated mass apparently as a result of fusion of separate nodules. Telangiectases were visible over one of the eyelid lesions. No milium-like bodies were seen.

EFFECT OF TREATMENT. Radiotherapy moderately applied caused appreciable diminution in the size of the lesions. Several of the latter, treated with a ten-second exposure to carbon dioxide snow, completely disappeared. Apparently, they were especially susceptible to each of these forms of treatment. The wounds made by the biopsies healed readily by primary intention.

During the three weeks preceding April 23rd, many nodules on the arms and legs disappeared spontaneously, leaving either stains or hyperpigmentation. This observation was verified in a careful examination made by Dr. Hyde and the writer. At the same time those nodules over each breast that had received some radiotherapy had largely disappeared, while the smaller ones over the neck and face which had been similarly treated entirely cleared up. During this time many new nodules were developing, especially about the wrists, forearms, and eyelids.

HISTOPATHOLOGY. A pea-sized nodule was excised from the anterior and lower portion of the thigh. It was fixed and hardened in the usual manner and stained for differential study. This lesion had recently appeared and therefore was representative of the earlier stages of the process. At the edge of this nodule, with the low power,

a well-defined area with cellular proliferations is seen, forming a distinct microscopic nodule. The pathological process is most marked deeply in the region of and involving the coil glands. Outside of this area the ordinary appearance of the minute anatomy of the skin is present. Still farther away are some sweat coils, ducts, and sebaceous glands and hair follicles apparently normal. At the lower part of the affected area a coil gland is present, to which there extended from above a mass of cellular proliferation in which parts of the coils and sections of the sweat ducts are visible (Fig. 5). This mass extends for a long distance obliquely through the corium. In this cellular area no structures are present aside from the cellular infiltration and remnants of the sweat apparatus. It is well defined and surrounded on all sides with collagen and elastin. This mass occupies the centre of the entire nodule at the lower margin. This coil gland appears but slightly affected, while in the mass above remnants only of coil ducts are visible (Fig. 6). The whole area above this is occupied by a more or less dense cellular infiltration. In places channels of cells are present, while in others the infiltration is less dense, but there is a decided increase over the normal. This lessens as the epidermis is approached. Immediately below the epidermis no departure from the normal can be detected. There is no connection between the pathological process below and the epidermis above. Large numbers of sections cut in this region exhibit the same conditions. Nearer the centre of the original nodule the following is noted:

Almost the entire breadth of the section is occupied by the process. In this region several areas of dense cellular proliferation are present, all beginning deeply and containing parts of the sweat apparatus in various stages of disintegration. Fragments of coils and sections of coil ducts also form parts of these masses. The second of these areas presents a huge mass of cells, well defined, extending from the centre of the corium downward into the subcutaneous tissue. In parts where the coil ducts are demonstrable, they seem to be choked with cells and often are merely the centre of masses of cells. In addition to these marked areas, some infiltration exists over the entire nodule and many channels of cells are seen about the margin. In one part a coil duct can be traced from the epidermis down for some distance when it loses its identity in a mass of cells (Fig. 7).

With the high power the cells of this mass are seen to be epithelial, of the same type as those lining the duct, and it seems probable that they are the proliferation-product of those cells (Fig. 8). Studying the nodule as a whole with the high power, it is noted that in the areas of dense cellular infiltration no collagen or elastin is present, and that the cells are largely epithelial in character with fragments of sweat ducts and parts of coil glands; the latter though broken up retain their identity and give no evidence of proliferation. In the intervening areas occupying the remainder of the nodule much cellular infiltration is present, but here both collagen and elastin are present though reduced in quantity and not reacting normally to the stains used, and the cells are of the connective tissue type, apparently induced by tissue reaction and not an essential part of the primary proliferating cell masses. Some hair follicles are present, but they are independent of the pathological process; and there could be found nowhere any connection between the epidermis and the process below except where it progresses along a sweat duct. The epidermis appears normal. The cells of the rete, of the granular layer and of the stratum corneum are present and well formed.

A second nodule of much longer duration than the first was removed from near the elbow. This was fixed in a modified Zenker's fluid, hardened in alcohol, and sections were cut in series. These sections reveal a process similar to that shown in the early nodule, but advanced to a greater degree. Here the entire corium has lost its identity and is represented by a cellular new growth in which only remnants of collagen can be found, with here and there an isolated fibre of elastin, one hair follicle, several groups of coils representing the coil glands, and many broken up sections of coil ducts.

The cellular mass occupies the entire corium from near the epidermis and extends deeply into the hypoderm. It is separated from the epidermis by a narrow band of connective tissue and is seen with the high power to be composed largely of epithelial cells which occur in variously sized masses and groups, at times forming a solid mosaic of cells. Interspersed irregularly about the field, short bundles of broken up collagen are present, with here and there a fibre of elastin. The usual connective tissue structure of the corium is therefore entirely lost. Some dilated blood vessels surrounded with lymphocytes were noted, with many groups and rows

of similar cells scattered about the field. One hair follicle is present, completely surrounded by proliferating cells, but no connection between the cells of this follicle and the surrounding infiltrate is suggested in a large number of sections examined.

One area which was studied through many consecutive sections deserves special description. This is a broad band or almost a solid mosaic of cells extending from near the epidermis above entirely through the corium into the hypoderm, where it becomes greatly enlarged, forming a large mass in the subcutaneous tissue. In the cellular mass, at a point just below the lower margin of where the normal corium should end, is a group of coils (Fig. 9), the walls of which are intact, everywhere showing the presence of the limiting membrane. Higher up, in about the centre of the corium and in the band above mentioned, are several coil ducts. These as a rule, in the sections examined, show intact limiting membranes, but many were cut across so that in places the cells surrounding the ducts appear to be continuous with those lining them. They were epithelial cells of identical structure. In this region the evidence is strongly presumptive of the origin of the infiltrating cells, but not absolute. In the subcutaneous tissue below the coils noted, this extensive infiltration consists chiefly of similar epithelial cells, with many groups of lymphocytes, a few dilated vessels surrounded by lymphocytes, and many round or oval spaces which appear to be the remains of lobes and lobules of fat which have not been invaded by the infiltrating cells.

The epidermis over the entire region is thinned in all of its layers and the wavy line between it and the corium is obliterated. Immediately below the epidermis, separating it from the cellular mass below, is a narrow layer of connective tissue in which some connective tissue nuclei are present.

In view of the nature of the lesions as revealed by the microscopic study, taken in connection with the widespread evolution of lesions connected with the sweat apparatus, a study of the patient's excretions was undertaken to determine, if possible, whether any abnormal substance was being excreted capable of inducing sufficient irritation to initiate the process. The patient was therefore placed in the Presbyterian Hospital and the work was carried out by Dr. Ralph W. Webster, whose report follows:

TABULATED RECORD OF URINARY EXCRETION.

Date.	Diet.	Amount.	Sp. Gr.	Total N.	Urea.	Uric A.	Am.
April 18.....	Cream and arrow root.....	775 c.c.	1015	6.51 gms.	10.85 gms.	0.0378	0.164
April 19.....	Folin's	935 "	1020	10.24 "	17.77 "	0.074	0.332
April 20.....	Folin's	600 "	1030	10.24 "	16.8 "	0.2	0.229
April 21.....	Folin's	760 "	1027	10.88 "	19.76 "	0.131	0.322
April 22.....	Folin's	730 "	1030	13.04 "	21.9 "	0.263	0.379
April 23.....	Folin's	1010 "	1024	12.99 "	18.18 "	0.299	0.372

NITROGEN PARTITION.

Total N.	Urea.	% of Uric acid.	% of Ammonia.	% of Undeter-
Grams.	Grams.	Grams. total N.	Grams. total N.	mined N. Grams.
Grams.	Grams.	Grams. total N.	Grams. total N.	Grams. total N.
6.51	10.85	77.83	0.0378	1.295 19.91
10.24	17.77	81.04	0.074	2.07 1.643 16.05
10.24	16.80	76.61	0.200	0.24 0.332 2.140 20.90
10.88	19.76	84.81	0.131	0.65 0.229 1.84 1.343 12.35
13.04	21.90	78.43	0.263	0.67 0.379 2.39 2.414 18.51
12.99	18.18	65.36	0.299	0.76 0.372 2.36 4.094 31.52

Cream and arrow-root diet.

Continued for one week prior to dates of examination of urine. The specimen obtained on April 18th was from this diet, all the others being upon the Folin diet, started after patient was in hospital. This diet consisted of 1½ pints of cream (14 % fat) and as much arrow-root gruel (made with water without any seasoning but a little salt) as the patient would eat.

Folin Diet.

Continued for one week. Whole milk, 500 c.c.; cream (14 % fat), 300 c.c.; eggs, 9; Horlick's malted milk, 200 gms.; sugar, 20 gms; salt, 6 gms.; water, about ½ litre.

Remarks.

The routine chemical and microscopical examination of the urine showed no abnormal findings at any time during the period of investigation.

Dr. Webster adds further: "This report does not give in detail the routine chemical and microscopical examination, as nothing abnormal was shown at any time. Only one detailed examination was made of the urine when the patient was on the diet of cream and arrow root, but inasmuch as she was on this diet for a week preceding this examination, it is reasonable to suppose that the output of April 18th would represent her excretion on this non-nitrogenous diet. The excretion under the Folin diet, which diet is tabulated in this report, shows nothing as far as the elements determined indicate, which could in any way enable us to draw conclusions regarding this case. It is entirely possible that a more detailed examination of the

nitrogen excretion given under the head of "Undetermined Nitrogen," would show some interesting facts. The relationships of the other nitrogen factors are within the normal limits for such substances under this diet.

From these few experiments, I am inclined to believe that we must search for the error of metabolism, if such there be, in disturbances in the formation and output of urinary bodies other than those containing nitrogen."

In addition to the above report on the urinary examinations, some investigation was carried on with the intestinal excretions, but sufficient time has not elapsed for any of this to be completed. All of this work is to be continued with investigation of the sweat itself, and when completed will be incorporated in a future report.

SUMMARY AND CONCLUSIONS: First. After due consideration of the findings above recorded, we feel justified in placing the case in the syringocystoma group, though it must be admitted that marked differences exist between this and previously recorded cases in the findings histologically.

Second. It is entirely unlike any case of multiple benign cystic epithelioma and could therefore not be classed with that group.

Third. Clinically, the lesions were much more extensive than in any previously recorded case, though the individual lesions are similar in many respects to those described in connection with cases of the syringocystoma group.

Fourth. In no previous case is spontaneous involution of lesions recorded.

Fifth. Histologically the sections show the most marked pathological changes at all times in the region of the sweat ducts, and strong presumptive evidence is obtained from the sections that the new growth is a proliferation-product of the cells of these ducts.

Sixth. A connection between the cells of the hair follicles or of those of the epidermis with those of the new growth could not be demonstrated, nor was it suggested.

Finally, from the fact that the lesions in this patient developed over so great an area, practically symmetrically, and moreover show such marked evidence of involvement of the sweat apparatus, the problem of local irritation from some excreted substance due to some error of metabolism must be excluded, but thus far the work done leaves the question unsolved.

PLATE L.—To Illustrate Article by DR. OLIVER S. ORMSBY.



Fig. 1.



Fig. 2.

PLATE LI.—To Illustrate Article by DR. OLIVER S. ORMSBY.



Fig. 3.



Fig. 4.



Fig. 5.

Photomicrograph. Low power. Showing proliferating mass of cells extending obliquely through the corium from remnants of coil duct (A) to coil gland (B) below.

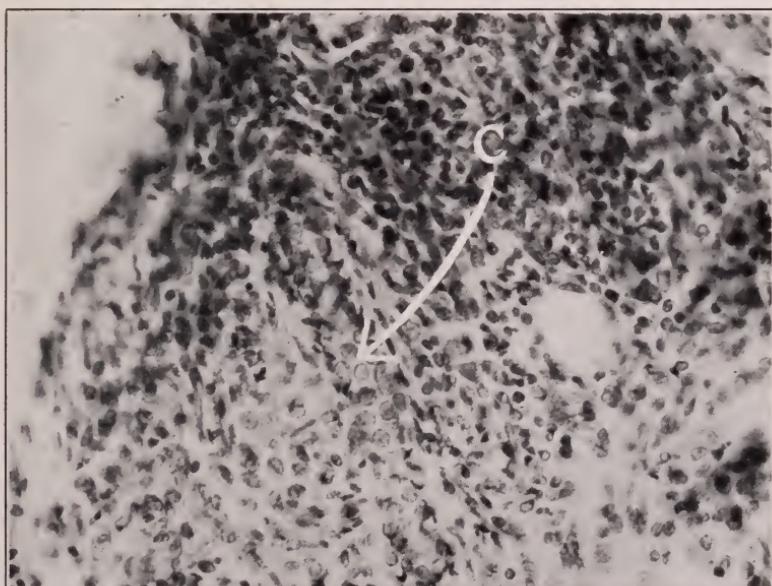


Fig. 6.

Photomicrograph. High power. Showing a fragment of a duct (C). This is the duct shown in Fig. 5, indicated by A. This shows the similarity between the cells of the duct and surrounding cell mass.

PLATE LIII.—To Illustrate Article by DR. OLIVER S. ORMSBY.



Fig. 7.

Photomicrograph. Low power. Showing section of sweat duct (D) extending from epidermis above to a mass of cells below.



Fig. 8.

Photomicrograph. High power. Showing higher magnification of the duct (F) shown in Fig. 7 (D). The surrounding cells shown here appear to be continuous with and of the same type as the cells of the duct.

PLATE LIV.—To Illustrate Article by DR. OLIVER S. ORMSBY.

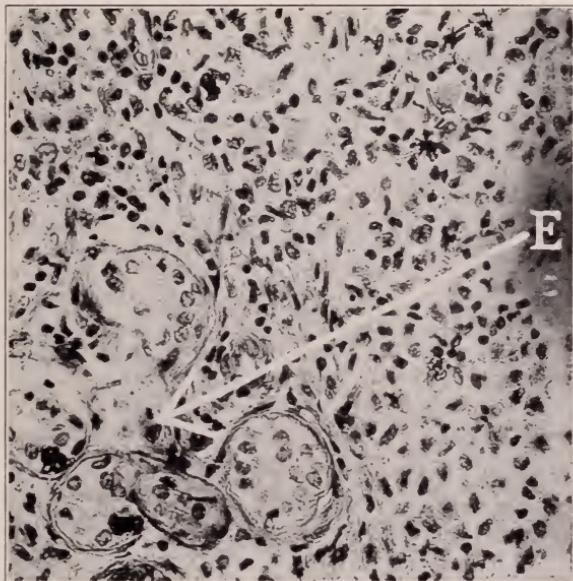


Fig. 9.

Photomicrograph. High power. Showing a group of coils (E) surrounded by a mass of epithelial cells. Above this coil not shown in this illustration, are several remnants of coil ducts.

DISCUSSION.

DR. JAMES NEVINS HYDE said the case described in Dr. Ormsby's paper was on the whole one of the most extraordinary that he had ever seen. Together with the late Dr. Frank Montgomery, he recalled seeing two cases of syringocystoma, one of them with well-marked lesions in the axillary region, but the resemblance of the latter to this case was not marked, and when he first saw the patient whose portrait is shown it did not impress him as a case of syringocystoma.

Personally, Dr. Hyde said, he could corroborate what had been said as to the disappearance of some of the lesions. He could also confirm what had been said in regard to the microscopic findings.

DR. J. A. FORDYCE said that Dr. Ormsby's very interesting paper cleared up the confusion that had existed in his mind and doubtless in the minds of others regarding the identity or non-identity of syringocystoma and multiple benign cystic epithelioma. This confusion was due to the close clinical similarity of the two types and to the fact that the first observers of the affection confused the nomenclature. There was, however, a clear distinction between the two. One had its origin in the sweat glands; the other in the basal layer of the epidermis or the hair follicles. Dr. Ormsby's case illustrated the connection between these lesions and the sweat ducts very clearly.

DR. CHARLES J. WHITE said he did not think that multiple benign cystic epithelioma was a very rare disease. He had had three or four examples under his own observation, and had become convinced that the lesions could have their origin from various sources, hair follicles, epidermis, sweat glands, or ducts, et cetera. In syringocystoma, he had examined many sections and he regarded the sweat apparatus as the point of origin of the lesions. In another case, after a careful examination of 110 sections, he was forced to believe that the new growth started from the endothelium of the blood vessels.

DR. WILLIAM ALLEN PUSEY said that when Dr. Ormsby's case was shown at a meeting of the Chicago Dermatological Society, he was at first struck by the resemblance of the lesions to those of multiple benign cystic epithelioma and lymphangioma tuberosum multiplex, but when he saw the extensive distribution of the lesions over the body and their method of involution, he was unable to classify the case. He had examined Dr. Ormsby's serial sections and there was a sharply circumscribed cell infiltration in distinct relationship to the sweat glands. This looked very much as though it were due to some irritant excreted by the sweat glands which was producing an inflammatory process around the glands and proliferation of the epithelium of the glands.

DR. S. POLLITZER said it seemed to him that there was a very great difference between Dr. Ormsby's case, and the case, for instance, reported by Török under the name of syringo-cystadenoma. In that case, the lesions showed histologically a very delicate accumulation of cells in parallel lines that suggested the description of Kaposi, who published his case of this disease under the name of lymphangioma tuberosum multiplex. There the lesions were thought to be of vascular lymphatic origin, but the appearance was subsequently shown to be due to rows of epithelial cells inclosing small masses of colloid substance. Such a case contrasted enormously with the case reported in Dr. Ormsby's paper, or with the case of Perry, which was published under the name of adenoma of the sweat glands.

DR. POLLITZER said he could not convince himself that all these cases belonged to the same category. In one he thought we had a condition which might depend on a growth from the sweat glands; in the other, from the epithelium of the hair follicles. Another point that would need clearing up was the reason for the sudden development of such lesions, which were in the nature of nævi.

DR. M. B. HARTZELL said there was no longer any doubt that a large proportion of these cases, which had been variously reported under the names of multiple benign cystic epithelioma, syringocystoma, hydadenoma, lymphangioma tuberosum multiplex, etc., were examples of epithelial neoplasms, having their origin in the basic layer of the epiderm or the columnar cells of the hair follicles. He thought that before we could say positively in any case that the lesions had their origin in the sweat glands, we were bound to demonstrate the actual connection of the neoplasm with the sweat gland. We might express the belief that it was connected with the sweat gland, but thus far we had not been able to demonstrate it. He did not mean to question the diagnosis of the case reported by Dr. Ormsby, but its connection with the sweat gland had not been positively demonstrated.

DR. HYDE said that some allowance must be made for the fact that the lesions disappeared spontaneously.

DR. MARTIN F. ENGMAN said that the question of cell growth was a subject that had received comparatively little attention in connection with diseases of the skin, but in other fields of science and medicine, many significant facts had been brought forward.

The Hormon theory of Starling, which had been confirmed by others, was exceedingly interesting in relation to the chemical stimulation of certain cells in the body. Undoubtedly, new growths, which we would call embryonic tissue, whether embryonic or not, might be the result of chemical stimulation, similar to the chemical messengers of Starling. These specific chemical bodies, generated by the economy, might have a specific action upon certain types of cells, and stimulate them to rapid multiplication, thereby causing the sudden appearance of new growths over the body.

Thinking along these lines, Dr. Ormsby's case was exceedingly suggestive and interesting.

DR. ORMSBY called attention to the fact that some of these lesions seemed to be slightly affected by gravity. From the knee to the ankle the lesions were a little more conspicuous than they were above the knee, and the same was true of those over the dependent portions of the breasts.

In speaking of the point of origin of the lesions in the various cases, Dr. Ormsby said he thought that in cases of multiple benign cystic epithelioma this question had been settled by Drs. Fordyce, Hartzell, and others; these observers, having traced the evolution of the cells of the new growth from the rete and hair follicles. The few cases that had been classified under the other category, however, had not yet been settled, as the conclusions of the various writers pretty well proved. Dr. Ormsby said he agreed with Dr. Pollitzer that the case of Török was entirely different in its histology and in other respects from his own case, and the same was true in the case of Dr. White. The fact that these lesions appeared so suddenly about the age of puberty brought the nævus question strongly to the foreground, but it did not eliminate the possibility that these new growths were due to some irritating substance. The work in connection with the possible metabolic origin of these lesions was only partly complete, and thus far it had given rise to many interesting suggestions.

THE DETERMINATION OF IMPETIGO CONTAGIOSA TO THE MUCOUS MEMBRANES.*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

Professor of Diseases of the Skin, University of California.

MY attention has recently been called to the invasion of the mucous membranes by the virus of impetigo contagiosa by a case that caused me a good deal of trouble and some anxiety. It is a complication that is rarely mentioned in text-books or even in current literature, yet it is important because the disease may linger on the mucous membranes after it has either been killed out, or has perhaps spontaneously disappeared from the skin. Furthermore, the occurrence of this complication demands special modifications of treatment, as the remedies employed on the skin may be altogether too strong to use on the delicate mucous membranes.

The case referred to above runs as follows: An architect thirty-five years of age, was referred to me by a colleague, August 23, 1909. He said that what appeared to be a "cold sore" arose in the right corner of the mouth about three weeks previously. Then the eruption spread to the right cheek, and to the right side of the neck.

When he consulted me he had a scattered crusted eruption of the face and neck, most marked on the right side. Both nostrils were intensely red, crusted and discharging an acrid serum. He had conjunctivitis of the right eye that had begun one week previously, and not alone the conjunctiva but the whole outer surface of the lids of the right eye was intensely red.

The patient was very uncomfortable, for he could scarcely talk and could not smile, for fear of dragging open the cracks at the right corner of his mouth. His nose needed constant grooming because of the discharge, and the crusts interfered with breathing, and his eye and eyelids were also a constant source of annoyance.

An ointment composed of:

R. Ung. Hydrarg. Ammon.....	16.00
Ung. zinci Ox.....	32.00

was ordered for the face, for the right corner of the mouth, and for the nostrils. Compresses of a hot saturated solution of boracic acid were directed to be used on the eye, and also in the nostrils, and at the right corner of the mouth.

* Read before the Medical Alumni of the University of California, Nov. 29, 1909.

The lesions on the skin began to fade away, as they usually do under white precipitate ointment, but the outer surface of the right eyelids became more intensely inflamed, and the whole ocular condition steadily continued to grow worse in spite of the use of a two per cent. red oxide of mercury ointment, and the instillation of a two per cent. boracic acid solution. The nostrils also became more inflamed, especially the right one. He shortly developed an intensely red sore throat, that was thought to be an extension of the same streptococccic infection. We finally used on the eyelids a paste consisting of:

R Amyli	25.00
Zinci Ox.....	25.00
Naftalan	50.00

M. Use at night and wipe off with olive oil
in morning.

During the day he was directed to use the red oxide of mercury ointment, as the naftalan preparation was so disfiguring as to prevent his going out. Calomel powder was dusted in the eye three times a day. A douche of liquor antisepicus alkalinus, diluted one-half, was ordered for the nose, mouth and throat. Under this the improvement was rapid. The improvement of the condition in the eye and nose was probably attributable to the calomel, which meeting the sodium chloride of the tears, forms small quantities of nascent bichloride of mercury, an excellent antiseptic in streptococccic infection.

Naftalan is a remedy especially brought to my attention by Oliver S. Ormsby of Chicago, as excellent in acute dermatitis. We were grateful for its use in this case. The white precipitate ointment, used strong enough to serve as an antiseptic against the infection we felt might be too irritating for the inflamed eye. The two per cent. red oxide salve was evidently too weak. The naftalan preparation seemed to answer admirably.

Naftalan is a remedy that was first brought to the notice of the medical profession by Neisser, and consists of from ninety-six to ninety-seven and a half per cent. of a crude naphtha distilled from a certain spring in the Caucasus.

Although the affected mucous membranes presented only the ordinary appearance of an acute inflammation, yet it was so intimately connected with the affection on the face that there would seem to be no reasonable doubt of its being a manifestation of the action of the same virus. It was coincident with the skin eruption, was very acute and superficial, as we would expect it to be, and

where the skin and the mucous membranes met, the eruption on the skin was characteristic of that of impetigo contagiosa.

In one hundred and twenty-six cases of impetigo contagiosa, of which I have records, fourteen of them, or 11.11 per cent. had some involvement of the mucous membranes. Usually this involvement was unimportant, but in some instances was at least inconvenient, and in the above detailed case really caused considerable anxiety. It is a curious fact that all of the implications of the mucous surfaces occurred in patients in private practice. In no case in the public clinic was there any record of such an invasion.

In six of the above instances of impetigo contagiosa of the skin there was an accompanying inflammation of the lips and mouth without involvement of any other mucous membranes; in one instance, of all the mucous membranes, the nostrils were alone affected; and in six instances, besides the skin, the edges of the lids or conjunctivæ were alone affected; and finally in one instance, as above detailed, there was an accompanying inflammation of the lips and mouth, throat and nostrils, and of the eyelids and conjunctivæ.

In none of the cases was the external auditory meatus affected, although the ear shell was involved in a number of them. In no case was the anal mucous membrane invaded, although the buttocks at times were the seat of particularly virulent attacks. In no case was the mucous membrane of the penis or vagina affected.

I have always had the impression that the nostrils are frequently invaded by this disease. Where I got this idea I do not know. It was quite a surprise to me to find that in only two cases was this present or a history of such. In one of these two, a woman, aged twenty-five, the right side of the cutaneous surface of the upper lip was affected, and there had been a soreness in the right nostril, that had passed away previous to consulting me. This, therefore, was probably a case where the nostril had been invaded. The other case was the one that forms the introduction to this paper, and where there was an exceedingly active inflammation of both nostrils.

Impetigo contagiosa of one or both corners of the mouth is treated by French authors as a separate disease called "perleche," and is sometimes quite a stubborn complaint. It forms heavy crumbly crusts situated on a moist actively secreting base, with a tendency for cracks to form in the commissure. The infection may begin here, and afterward spread out over the face. Three times in my cases the right corner of the mouth was affected, and once the left. The favoring of the right corner is probably due to the greater activity of the right hand in spreading infection.

The tongue in children is also supposed by some to be an important, if not the chief carrier of infection when the disease is situated on the lips or in the mouth. The little rascals have such a tendency to loll out the tongue in an effort to lick any sores adjacent to the mouth, that it is reasonable to suppose this is sometimes correct. My cases do not, however, indicate this mode of transmission as being the prevalent one, as the ages of the patients were sixteen months, six years, ten years, an adult, twenty-one years, thirty-five years, and thirty-eight years respectively, and adults, especially in the well-to-do classes, do not lick their sores. In one of the cases the disease had begun as a "cold sore" on the vermillion surface of the lower lip, and in another the disease had spread by continuity to the mucous surface of the lip from the neighboring skin.

Almost always the eruption will disappear from the lips or from the commissure with the application, two or three times a day, of a saturated solution of boracic acid, followed by a three per cent. white precipitate ointment.

The combination of one part of the officinal unguentum hydargyri ammoniati with two parts of unguentum zinci oxidi seems to act better than an ointment of ammoniated mercury alone.

In none of the above cases was a vaccine used. The only impetigo vaccine that would be of any use would be autogenous, and the lesions were so mixed at the time the patients applied for treatment, that there was no hope of obtaining anything but a staphylococcus vaccine. Such a vaccine might be of some service in a case that did not yield to well-known and effective remedies.

As above indicated the invasion of the mucous membranes by this disease is rarely mentioned in literature, and seems to be especially avoided by dermatologists. The best article in English I have found, and I have searched with fair assiduity, is by Edward F. Cushing, who gives a full list of the literature on the subject.¹

E. F. Cushing reports in his paper a case of impetiginous stomatitis, and one of impetiginous rhinitis, and quoted Comby as having observed lesions in the mouth precede those of the skin, and of having seen involvement of the mucous membranes of the nose, of the eye and of the vulvo-vagina.²

I do not know of any reports of cases involving the meatus auditorium externus or the anus.

REFERENCES

¹ CUSHING, E. F. "Stomatitis in Impetigo Contagiosa." *Arch. Pediat.*, June, 1904.

² COMBY. *La France Médicale*, December 24, 1887. Quoted by E. F. Cushing.

SOME ELEMENTS IN THE PROGNOSIS OF ACQUIRED SYPHILIS.*

EDWARD L. KEYES, JR., M. D., Ph. D.

SOME forty years ago one of the most distinguished surgeons of that day in New York used to remark aphoristically to his students, "There are only three things a medical practitioner need know: viz., diagnosis, prognosis, and how to regulate his fee." That generation practiced the Art of Healing. The Science of Medicine, as we know it, from asepsis to vaccines, was unborn. Speculation founded upon clinical experience, was almost the sole arbiter of diagnosis as well as of therapeusis, and the student who had spent a year in the office of an eminent practitioner was rightly accredited an education fully equal to that obtainable in a like period from the medical school.

But that amiable day has passed. The microscope and the test-tube have replaced the gold-headed cane and the full-bottomed wig as symbols of medical wisdom.

But though both the diagnosis and the treatment of disease have been almost wholly placed under control of the laboratory, prognosis retains, and must always retain a human touch, an element of individuality, based upon our ignorance of the essential underlying phenomena of life as well as upon the infinite variety of human characteristics.

And the quintessence of prognosis is found in syphilis. For the prognosis of syphilis is almost the prognosis of human life. It is compounded of all the elements of our civilization. Age and occupation, constitution and hygiene, the tension of modern life, the neurasthenia of the indolent, as well as the privations of the poor, form the light and shade of this prognosis, while alcoholism, the cause of micropathologic vascular and visceral changes so closely resembling those of syphilis itself, is the great blot upon our syphilitics, as it is upon our civilization.

Does syphilis shorten life? Yes and no.

It is sufficiently obvious that many a syphilitic lives to a very old age, while certain victims succumb to the disease, either directly or indirectly. The precise proportion of syphilitics whose lives are curtailed will perhaps never be accurately estimated. But one may

* Read before the Boston Medical Library Association, Boston, Mass., February 16, 1910.

cite the statistical conclusions of the following observers: * Mathes, of Jena, studied the cause of death in 160 hospital syphilitics and found that 15 per cent. surely and 22 per cent. probably, died as a result of the disease. It is to be noted that these statistics were obtained among hospital patients, *i. e.*, among patients of the lower classes.

At the other end of the social scale insurance statistics may be quoted. Byron Bramwell estimates that 75 per cent. of the syphilitics insured in the Scottish Widows' Fund died of their disease, while Blaschko estimates from the statistics of the Victoria Company that 26 per cent. to 33 per cent. of syphilitics die of their disease; constituting 6 per cent. of the total mortality of this company.

In the United States, during 1908, there were reported 2,432 deaths from syphilis (doubtless chiefly infantile), 2,387 deaths from paresis and 198 deaths from tabes. This combined mortality amounts to 13 per 100,000 inhabitants and is approximately equivalent to the mortality from appendicitis, childbirth, diabetes, railroad accidents or suicides.

With all possible allowance for statistical errors it is not a little shocking to find the mortality of syphilis estimated so high. But in studying the figures we are immediately struck with the fact that the cause of death is scarcely ever a simple syphilitic process. The ever recurring tabes, paresis and aortic aneurism in the insurance statistics leave one wondering at the rarity of direct tertiary cause of death. Of the life insurance deaths attributed to syphilis about 45 per cent. are due to paresis, about 15 per cent. to tabes, 18 per cent. to aortic aneurism and arterio-sclerosis, 15 per cent. to syphilis of the nervous system, and only about 2 per cent. to other tertiary manifestations.

As an interesting corollary it follows that the average abbreviation of life by syphilis is slight: viz., one year and four months, according to Bramwell; four years according to Blaschko.

The most important point in the prognosis of syphilis is, therefore, the prognosis as to these vascular and visceral scleroses of the so-called parasyphilitic type. And this very point is confessedly most obscure. That tabes and paresis are the result of syphilis plus civilization, that they are common only in urban centres, does

* These and the following statistics are quoted from Blaschko's report before the Fourth International Congress of Examining Physicians for Insurance Companies, Berlin, 1906.

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PROGNOSIS OF ACQUIRED SYPHILIS.

not establish their precise cause. The phlegmatic Briton, and the nervous American seem relatively immune as compared to the phlegmatic Teuton and the nervous Frank. Neither the alcoholism of Great Britain nor the business strain of the United States seems to produce the evil result one would expect.

It is to be noted, however, that although it is not determined with certainty whether, as Fournier and the French school insist, these so-called parasyphilides are more frequent after early syphilis of a mild type or, as Neumann believes, after early syphilis of a severe type, all are agreed that the customary early systematic mercurial treatment minimizes the prospects of these complications. Thus Fournier found that only 5 out of 100 paretics, and Neisser that only 5 per cent. of his 540 tabetics had been properly treated. In each instance from 80 to 90 per cent. had scarcely been treated at all. It is to be hoped that future observations may bear out this inference.

The effect of mercurial treatment upon the prognosis as to purely syphilitic lesions is very curious. We recognize in mercury our preëminent controlling agency. Not only do syphilitic lesions disappear under its administration, but also the spirochætae, and the Wassermann reaction are markedly affected. Yet, however efficient the mercury in controlling lesions and in decimating spirochætae, we see enough relapses in well-treated cases to feel assured that this drug does not annihilate the specific organism. Mercury controls but does not cure syphilis. The control by mercury is a necessity; but for a cure we must wait upon time and hygiene.

It is, of course, impossible to study the effect of hygiene and mercury separately. The patient who cannot or will not submit to good treatment, habitually cannot or will not take care of his hygiene. Contrast syphilis in private practice with syphilis in the clinic. In the former a goodly majority escape with only a few months' symptoms and without so much as a permanent scar, while the latter are battered by dire adversity.

This contrast has been nicely illustrated in a report by Dr. MacDonnell * entitled "Syphilis in the Well-to-do." Comparing 145 office patients with 140 clinic patients, he found that among his office patients 65 per cent. had only mild transitory lesions (while 6 per cent. had lesions which, though severe, disappeared without leaving a scar), and only 26 per cent. were in any way per-

* *Med. Rec.* May 11, 1901.

manently scarred. Among the clinic cases, on the other hand, only 33 per cent. escaped with transitory lesions, while 51 per cent. were permanently scarred.

So convinced am I of the benignancy of well-managed syphilis that I always venture to prophesy to a patient, when he puts himself in my hands, that if he will take proper care of himself he need expect only a trifling inconvenience from his disease, and that at the end of his three or four years of treatment he will have to confess that his fear of the disease has been by far its greatest inconvenience.

What, then, is "proper care?" It consists of three things: viz., intelligent administration of mercury, abstention from alcohol, and general hygiene.

Under "intelligent administration of mercury" are included too many items for enumeration here. But underlying all is the notion that mercury is given as much for the prevention of lesions in years to come as for the relief of existing symptoms. Hence the mercury is administered constantly and systematically whether the patient shows any symptoms or not. But since mercury can only be relied upon to control the disease, and since mercurialization seems as unhygienic as any other poisoning, the greatest care is taken to avoid salivation, to interrupt treatment immediately at the first symptom of poisoning, and in treating grave, destructive lesions with high doses of mercury and iodides, always to employ interrupted courses whether the patient is apparently poisoned or not. By the same token I can see no reason why mercury administered internally is not, for the majority of patients under the majority of circumstances, as efficacious as mercury administered upon or under the skin, though I confess that almost all of my patients receive injections or inunctions in time of stress.

By "abstinance from alcohol" is meant that during the first three years of his disease the syphilitic should be "on the water wagon." He is not even permitted the use of table wines, though an occasional "health to the bride" may be granted, and when a compromise is essential, he may be advised that he had better get "boiling drunk" twice a year rather than take a cocktail every day. (Presyphilitic saturation with alcohol is an evil thing, be it said.)

Moreover it is highly probable that inasmuch as the syphilitic cannot have an absolute guarantee that he is permanently cured,

he should never be licenced to drink habitually, so long as he lives. In my experience, syphilis without alcohol, and syphilis with alcohol are totally different diseases.

Finally, hygiene. The main elements of hygiene come easy to our private patients in every respect save one. They work too incessantly. We all realize that the man who takes no annual vacation, however hardy he may be, must in the end collapse. And if he is syphilitic his collapse is likely to be in the nervous system, and may take the form of paresis or tabes. I have recently seen a paretic whose condition was sufficiently accounted for by the fact that although he had never drunk or smoked in his life, during the eight years of his syphilis, which was mild and inefficiently treated at the outset, he had worked on the average ten hours a day without vacation. It is noteworthy that a far greater number of paretics seem to be recruited among politicians than among prize-fighters.

I have yet to see the syphilitic who, having taken this three-fold care of himself, came to any great harm. But syphilitics are as human as the rest of us, and less than half of them continue to live prudent lives.

I have followed with interest the history of some 2500 patients who have been through our office, and although most of the conclusions derived from a study of these cases were published two years ago, more recent experience has added certain data that may be worth recounting.

The effect of the patient's age upon the incidence of tertiarism is curious. The older patient is no more likely than the younger one to suffer from tertiary manifestations,* but these appear much earlier. Thus, of my patients who were infected before their twentieth year and ultimately had tertiary manifestations, one half went six years before these manifestations appeared, while among those infected after their thirtieth year the period was but three years. Moreover, of the younger men only 7 per cent. had tertiary lesions in the first two years of the disease, while of the older men 16 per cent. had tertiary lesions during this so-called "secondary period." Yet the older men were, on the average, much better treated than the younger ones.

Whether this influence of age (which is as marked in syphilis of the nervous system as in other tertiary manifestations) is due

* Of 107 males infected before the age of twenty, 41 showed tertiary lesions, while of 647 infected after thirty, 300 had tertiaries.

to natural tissue change, or to that mode of life which is likely to lead to syphilis in an older man, may be left to conjecture.

It is generally believed that the lesions of bone appear relatively late. This is true: they appear later than most tertiaries; yet it is surprising to find that even of the perforations of the palate and nasal septum, which are justly regarded as among the latest of the bone lesions, 50 per cent. occur within the first six years of the disease and 75 per cent. in the first ten years.

But further multiplication of such statistics would prove little and bore you much. Let us leave this subject of the incidence of grave lesions for that even more practical one, viz., their relapse. The syphilitic who, after years of seeming health, after bearing or begetting healthy children, even, breaks out with a gumma or a lesion of bone or of the nervous system, is usually unduly scandalized and fancies that dire results are to follow. Apart from the ataxics and tabetics, about 100 among my 2500 syphilites had relapses after five years of apparent health, but of these only 8 again relapsed after intervals of more than a year of freedom from symptoms (even under treatment). One may thus feel confident that eighteen months to two years of treatment and observation furnish ample reassurance against repetition of late relapses.

One more statistical deduction before we leave this arid field. What is the duration of syphilis? Including tabes and paresis, without allowance for treatment, alcohol or hygiene, putting every case, good, bad, or indifferent, into the conglomerate mass, how long does syphilis last? At what period can the syphilitic feel that his danger has passed?

The question is assuredly a burning one, and assuredly it has no absolute answer. The syphilitic may never be guaranteed that every danger of relapse has passed (though with equal certainty he may be assured that every danger of transmitting his disease to wife or child has passed).

To many physicians the admission that we have no criterion of a cure, and can, therefore, never guarantee the syphilitic against relapse with absolute certainty, is equivalent to a confession that syphilis is never cured. But such a conclusion is entirely unwarranted. A cure is fully as possible—and fully as impossible of verification—in syphilis as in tuberculosis. But post-mortem examination which attests the cure of the army of tuberculous patients does not, unhappily, prove anything for syphilis. Hence to prove the cure of syphilis, we are driven back to the uncertain clin-

cal method of accumulated statistics. Of course, in syphilis, of all diseases, this method may lead to grave error, since an apparent cure of several years' duration may well terminate in a relapse of the disease, and during the interval we have no means of judging which case is going to relapse and which is not.

The only way to overcome such a grave element of uncertainty is to accumulate a very large number of cases, and to verify the apparent cures by observation for many years thereafter. Now inasmuch as I found relapses after five years of perfect health in only about 100 out of 2500 cases, I assume that the percentage of error in an estimated cure, after five years of apparent health, is small enough to be negligible. Accordingly two years ago I collected and published * the duration of over 2000 cases of syphilis, also the duration of 213 cases watched five years after the disappearance of the last symptom, 101 watched ten years and 48 watched fifteen years or more. Since that time I have added fifty-odd to the "watched" cases, and curiously enough all these statistics substantially agree, (within 5 per cent. one way or the other) to the effect that three-quarters of these syphilitics, without distinction as to treatment, alcohol or hygiene, cease to have symptoms within five years of the chancre, 10 to 15 per cent. more within the next five years, and about half the remainder within each half decade thereafter, the decrease being in a geometric ratio.

In other words, three out of four terminated within five years, seven out of eight within ten years, while only one in thirty lasted over twenty years. These figures are as accurate as I could make them. It is to be noted, however, that a mortality of at least 7 per cent. from tabes, paresis, etc., is to be taken into account. I leave to your imagination the determination of the measure in which these statistics, derived from a rather select class of office patients, may be applied to the general public.

Although a discussion of the prognosis of syphilis that makes no mention of the Wassermann and Noguchi complement-fixation tests would be the play of Hamlet with the royal Dane left out, one cannot but feel grave trepidation in attempting a discussion of these tests. They are so new and so difficult of performance, that even in the hands of the most expert they are far from being constant criteria of the presence or absence of syphilis. Though it is not within our present scope to discuss these tests as diagnostic

* *Syphilis*, D. Appleton & Co.

agents, their general diagnostic quality must be stated as a preliminary to discussing them in reference to prognosis.

Positive reactions are obtained in certain non-syphilitic conditions, such as yaws, leprosy, and scarlatina. Occasional unexplained positive reactions also appear in cases apparently not syphilitic. Whether such cases actually are syphilitic but latent, or whether the reaction is due to some non-syphilitic condition of the patient's blood, we have no means of determining. Fortunately such cases are rare.

Finally these tests give positive reactions in most cases of active syphilis; the reaction begins to appear in the second or third week after the outbreak of the chancre. A positive reaction may be expected in every case of untreated, early, secondary syphilis; while latent syphilis in the first two years, and active syphilis under treatment, give positive reactions in from 40 to 70 per cent. of cases. In late syphilis, on the other hand, latent and untreated cases give a larger proportion of negative results, while active cases, if no treatment has been administered for three months, almost invariably give a positive reaction; but active late syphilis under treatment very commonly gives a negative reaction. In tabes, the reaction is almost invariably positive. In general paresis it is positive for about 60 to 70 per cent. of cases; and in these conditions, as well as in certain tertiary lesions the reaction often continues positive in spite of anti-syphilitic treatment. Thus I have recently seen a case whose syphilis of the nasal septum had been entirely controlled by treatment, and apparently cured; yet the patient continued to show a positive Noguchi reaction.

Now various prognostic claims have been made for these serum tests. Noguchi, for example, states that a weak reaction means that though the lesion is under control, treatment must be continued. Moreover, two or three cases have been reported in which the patient reported apparently clean, had his blood tested by the Wassermann reaction with positive result, and very shortly afterward broke out with grave tertiary lesions. Were this invariably the case, we should not hesitate to hail the serum reaction as a most important prognostic agent. But syphilis is quite as eccentric in its serum reaction as in its clinical manifestations. In some instances a positive reaction has persisted for months and yet no symptoms have appeared.

This brief résumé of the prognostic position of the serum reaction suggests that it is absolutely to be depended upon in diag-

nosis only in untreated secondary cases. It is of great importance in the diagnosis of tertiary lesions, to be sure, but only by way of confirmation; and so difficult is it sometimes to overcome a positive reaction by treatment that we may be quite confident that such a positive reaction is no certain evidence of an impending outbreak.

Neither, on the other hand, is the negative reaction certain evidence that the patient's syphilis is latent, or that it is cured. But the Wassermann and the Noguchi reactions are, generally speaking, quite as accurate as the various tuberculin reactions, which find so much favor at the present day as diagnostic measures; and these syphilitic reactions may be employed with great advantage if their conclusions are guarded by strict reservations; if they are only used to confirm an opinion already formed on clinical data. For example, it is my custom to dismiss my syphilitic patients after three years of treatment, if during the last year they have had no symptoms of the disease, and with only the reservation that they shall not marry for two years longer. But of late it has seemed wise to request these patients to return six months after the cessation of treatment for a Wassermann test, and again six months or a year after that for a second test. If these are negative, it certainly seems probable that the patient has seen the last of his disease, while if they are positive, (a contingency which has not yet occurred in my experience), I should feel impelled to resume treatment for two or three months and then test again, in the hope that the reaction would thus be rendered negative. By so acting, we may hope, in the course of a generation or so, to establish the prognostic value of these reactions.

These tests have, however, been of the greatest service to me as a club with which to beat into submission the recalcitrant ancient syphilophobic: the man who has pains in his back or in his joints, and who either insists upon taking a little mercury or a great deal of iodide, or on returning yearly to the Hot Springs of Arkansas, in the vain hope that he may rid himself of some totally non-syphilitic neurasthenia. A great deal can be done for such patients by the judicious employment of the Wassermann and Noguchi tests; but they have yet to prove their value in the prognosis of syphilis.

DERMATITIS EXFOLIATIVA TREATED WITH QUININE.

By W. H. MOOK, M.D., St. Louis.

Associate Physician, St. Louis Skin & Cancer Hospital.

IN the September, 1908, number of THE JOURNAL I reported four cases of dermatitis exfoliativa, and two of pityriasis rubra (Hebra type), treated by the administering of large doses of quinine sulphate. The results in all were quite prompt and satisfactory.

I wish to add another case to the list, in which the treatment has been equally satisfactory. The history of the patient is as follows: Mrs. B., sixty-three years of age. She states that she has always been remarkably healthy. Her skin affection began, she thought, about two years previously, as a general pruritus, but with no visible lesions; a few months later, she noticed that her hands, feet, and the lower portions of her legs had become swollen, and a diffuse redness had appeared. The redness spread up over the thighs, gradually becoming universal, and then the exfoliation of large and small flakes of epidermis was noticed. When I saw her on July 1, 1909, the affection was universal; the skin was bluish-red in color, oedematous, and the entire surface was covered with large and small, closely, and loosely adherent, scales. The flexor surfaces of the knees and elbows were greatly wrinkled, owing to the oedema. On the legs and forearms, where the oedema had taxed the skin to the utmost, were seen areas from which serum oozed constantly. The hair was almost entirely gone from all parts, and that remaining was thin, fine, and dry; perspiration had stopped entirely a year before; the nails showed slight pitting with an occasional corrugation. Her subjective symptoms were frequent chilly sensations, and on the hottest nights in summer she was compelled to cover with blankets, and apply hot water bottles to keep warm. She was continually sleepy and would frequently lie down and sleep for half an hour several times a day: pruritus was intense at times. She had lost about thirty pounds in weight, though her appetite and digestion had remained good.

The patient was given five grain capsules of quinine hydrochlorate four or five times a day, local treatment being omitted;

the hydrochlorate was substituted for the sulphate at the suggestion of Dr. James R. Clemens, as he thought a larger amount would be absorbed than if the sulphate were given. The effect was exceedingly rapid; within one month, the profuse exfoliation had entirely stopped, the oedema had disappeared, and the chilly sensations only occurred at intervals. The desire to sleep during the day was only occasional, the general physical condition was greatly improved, and perspiration had reappeared. The quinine was then stopped for six weeks, and thyroid extract, in one-half grain doses three times a day, was given. Two weeks later, the skin became reddened, oedematous, the exfoliation reappeared, and in six weeks the relapse was complete. The quinine was again given, five grains, three or four times a day, and improvement was noticed within a few days. Three months later her skin was practically well; and seven months after her treatment was begun, it was perfectly normal. The hair had grown and was as profuse as ever, and she had recovered her health entirely, having gained twenty pounds. She has not taken quinine in the last six months, and has remained perfectly well in every respect.

The affection was diagnosed as dermatitis exfoliativa, though having all the classical symptoms of pityriasis rubra of the Hebra type, except the atrophy. This, however, would most likely have soon followed, for the entire cutaneous surface was continually sodden with oedema, was in a constant and progressive state of inflammation, and there had been no improvement of any kind until the administration of the quinine. Biopsy and photographs were refused. No local treatment was used, and quinine hydrochlorate was the only drug administered, except for the six weeks' treatment with the thyroid extract, during which time there was a complete relapse.

SOCIETY TRANSACTIONS.

CHICAGO DERMATOLOGICAL SOCIETY.

December 29, 1909.

DR. WILLIAM ALLEN PUSEY, Chairman.

(The members of the American Dermatological Association were entertained as the guests of the Chicago Dermatological Society, at its regular meeting on December 29, 1909.)

Lichen Planus Atrophicus (Hallopeau). Presented by DR. ORMSBY.

This patient, Mrs. M. A. P., was thirty years of age; the duration of her disease was one year and a half. The lesions were situated chiefly over the shoulders and clavicles. When first seen in August, 1909, the lesions were exhibited as irregular, white, flat-topped papules, each containing from two to five black horny plugs. The papules occurred both as discrete lesions and in patches, where a number had fused.

When shown to the Society, the horny plugs had largely disappeared under treatment and the papules were less distinct, but still retained their peculiar white color and the minute depressions representing the former seats of the horny plugs.

DR. CORLETT said this case resembled one he had had the pleasure of presenting under the provisional title of "A Peculiar Atrophic Eruption Presenting an Appearance Analogous to Linear Nævus" at the International Dermatological Congress held in New York two years ago. At that time the lesions were of earlier date than those shown to-day. The atrophic condition had not gone on to so great an extent as in the case here presented. In his case the collection of sebaceous matter was very marked, so that the atrophic lesions were dotted over with little black specks—comedones. Hallopeau, who was present at that meeting, examined the case, although Dr. Corlett did not recall that he spoke of having seen a similar condition. It was regarded by all as unique, but he received no special light on the case. That case, he believed, was identical with this, excepting that Dr. Ormsby's patient had progressed to a later stage. The case shown at the Congress had not been seen for a year and a half, hence he could not give a further report regarding it. The woman gave a history of her father having died of some disease of the spine.

Report of a Case of Sporotrichosis. By DR. HYDE AND DR. DAVIS.

This report was concerning a case of sporotrichosis occurring in a young man who presented himself on the second of December, 1909, coming from a neighboring State and who had since returned home.

The patient was twenty-four years of age and had been ill for two months. He had been sent for diagnosis from a physician living in his neighborhood, who supposed that the patient had glanders in consequence of the fact that some time before his observation of the case,

the young man had been on a neighboring farm where some cattle that had died, or had been killed, were supposed to have suffered from the latter disease.

When examined, it was discovered that the disorder, for which he asked diagnosis and treatment, began six weeks previously as a pustule located in one of the hair follicles on the back of the left hand. This lesion spread from point to point, not only over the member affected, but also elsewhere on the body, so that his physician had opened some fifteen or more cutaneous and subcutaneous abscesses in different parts of the body, which were described by him as "glands."

A circular ulcer was discovered at the site of the primary lesion with a soft margin and granulating floor, discharging characteristic sero-pus.

The patient was taken to the Presbyterian Hospital and there cultures were made, resulting in the discovery of the spirothrix in typical development.

Microscopical examination conducted by Dr. Davis revealed the following:

A small amount of pus was obtained from the margin of the lesion on the hand, and one of the small abscesses near the elbow was incised, from which a swab was made for bacteriological purposes. Stained smears of this material showed numerous pus cells, but no organisms of any kind. Cultures made on blood agar plates and plain agar remained sterile. Cultures on blood agar slants from both the hand and arm lesions, after a few days showed a few small gray colonies, which proved on examination and subculture to be the *Sporothrix Schenckii*. No other organisms were present. Blood cultures gave negative results. The organism in a hanging drop showed the branching mycelium with numerous round or pear-shaped spores attached by delicate pedicles. It was gram positive and stained readily with the ordinary dyes. It grew slowly on the common culture media, but preferred sugar media. Blood media was also found satisfactory. The colonies were grayish-white and might become several millimetres in diameter after several weeks. The surface of the colony was rough and corrugated, and at the margin were prominent radial striations. Dark-brown or nearly black pigment might later form in the surface of the growth.

Inoculated into mice and rats the organism proved to be pathogenic. Chronic, slowly progressing ulcers, simulating the lesions in the human, were obtained in mice, and from the purulent exudate of these lesions the oblong forms, characteristic of this organism in tissue, were found in abundance.

This organism corresponded in every detail to the spirothrix described by Schenck¹ and by Hektoen and Perkins² and which had been named by the latter authors, *Sporothrix Schenckii*.

¹ *Bull. Johns Hopkins Hosp.*, December, 1898.

² *Jour. Exper. Med.*, 1900, v. 5, p. 77.

A more exhaustive report of the case, Dr. Davis said, would be published later.

DR. PUSEY said that anyone who looked over the literature of sporotrichosis, would have it suggested to him that in all probabilities the disease was not uncommon. Cases had been found in the most widely separate parts of the world; In the United States, (Baltimore, Chicago, California, Kansas, Dakota); in France; in Argentina; and Brazil. The condition, which was clinically not unlike chronic glanders, tuberculosis, and syphilis, had probably been passing unrecognized because the organism was difficult to find except in cultures. He thought the whole situation indicated that sporotrichosis was going to turn out, as blastomycosis had in Chicago, not to be an excessively rare disease. He could not read the literature of sporotrichosis without a little feeling of indignation. Sporotrichosis was described by Schenck, who had studied the organism and gave it the name of *Sporothrix Schenckii*. In the meantime Brayton of Indianapolis, published a case clinically identical, but without microbial findings. Then five years after Schenck, de Beurmann had found the same thing in Paris and all over the world the disease is now being described as sporotrichosis Beurmannii. Within a month the title "Sporotrichosis Beurmannii" had appeared on the program of a branch of the Chicago Medical Society.

Bromide Eruption Simulating Blastomycosis. Presented by DR. ORMSBY.

Mrs. J. E.; aged sixty-nine. The patient was a nervous woman, the mother of twelve children. The family and personal history were negative aside from the nervous condition. The present trouble began as a pustule on one leg below the knee in April, 1909. New lesions appeared and the disease gradually spread. Shortly after, the opposite limb was attacked in the same manner and the lesions spread in the same way. In March, about three weeks before the appearance of the disorder, the patient began taking some medicine for the nervousness, since which time she had taken five and a half bottles. On examination this was found to be a preparation of the bromides.

When shown to the Society, both limbs from near the knee to the ankle were involved. The lesions were exhibited as large patches with elevated and well-defined borders. The centres were brownish-yellow in color and atrophic. About the active margins the lesions were papillomatous and in places verrueous. Scattered about the patches were many papulo-pustules. In addition to these large areas, a patch the size of a silver quarter had been present upon the thigh; this now exhibited delicate, brownish, atrophic skin.

Blastomycosis. Presented by DR. ZEISLER.

The patient was a man, forty-three years of age. The present disease began three years ago as a small papulo-pustule on the chin. This lesion gradually increased to the size of a silver quarter and became covered with a thick crust. Other similar lesions appeared on the right lower eyelid, the nose, the forehead, the trunk, and both legs—

twenty-seven in all. Blastomycetes were demonstrated in pus from the lesions.

Under X-rays and potassium iodide, healing of all the lesions occurred. Ectropion of the right lower eyelid resulted. Recurrence of the disease took place on the right side of the neck. The new lesions were peculiarly obstinate to treatment which was, however, rather desultory because at the time of presentation of the case, the right side of the neck was the site of several lesions, fairly typical of blastomycosis.

Lupus Vulgaris. Presented by DR. ZEISLER.

The patient was a colored woman, thirty-one years of age. The present disease began sixteen years ago. The nose, upper lip, and both cheeks were involved at the time of the presentation of the case. The nose and upper lip were the seat of small, soft nodules, coalescing in places into solid patches. In certain diseased areas the color was lighter than the normal negro skin, evidently from loss of pigment over the infiltrations. On the cheeks, atrophic scarring had occurred, resulting in light chocolate-colored patches. In a few places superficial ulceration had taken place. The absence of the usual color element observed in the Caucasian skins made the diagnosis more difficult.

DR. FOSTER said the case presented was interesting to him because he had seen many cases of skin diseases among negroes in his clinic. He had observed a number of cases in negroes of what he thought to be a combination of lupus erythematosus and lupus vulgaris, which had had very similar clinical appearances to the case exhibited. It had not been possible to draw a sharp distinction between the two, and possibly the two diseases were coincident in the same patient.

DR. ZEISLER said the remarks of Dr. Foster were interesting to him and he presented this case as one of the borderline cases, where it was difficult to make a sharp distinction between lupus erythematosus and lupus vulgaris. He presented it as a case of lupus vulgaris bordering on lupus erythematosus. He spoke of a very similar case to the present one, which occurred in the speaker's clinic some years ago, where it was impossible to make a clinical distinction between the two diseases, by which he meant that the configuration and location of the trouble resembled more the clinical picture of lupus erythematosus, while the individual lesions had a strong resemblance to lupus vulgaris, as in this case. The atrophic patches on the cheek, in the present case, suggested lupus erythematosus, while the infiltrated patches on the nose looked like those of lupus vulgaris.

DR. PARDEE said the lesions were clinically those of lupus erythematosus, but on section showed typical tuberculosis with ordinary arrangement. There was one peculiarity about the case; the lesions were generalized; the woman had lesions not only on the face but on the arms, legs, and buttocks.

DR. ORMSBY said that six or seven years ago there was a colored patient in the clinic suffering from lupus vulgaris, the lesions presented being practically identical with those in the case under discussion. This patient was treated for a year and then went east to the Skin and Cancer Hospital in New York City.

At the last International Dermatological Congress, photographs of this patient were presented by Dr. Howard Fox, labeled lupus vulgaris.

DR. HEIDINGSFELD stated that all dermatologists were pretty well agreed regarding the separate identity of the two diseases. He believed that the two affections were distinct entities and that lupus erythematosus, *per se*, had nothing in common with lupus vulgaris. It had been his privilege to see quite a number of cases of lupus erythematosus in colored people, some in almost pure types of the African race. The clinical aspects of those cases showed little in common with the case under discussion. Cicatrization was less pronounced and was smoother and less atrophic in character. Scales and crusts were scantier and less in evidence. Distinct nodules were entirely absent and there was a total lack of the thick, doughy infiltration presented by the case of Dr. Zeisler. He believed the case was one of lupus vulgaris unassociated with lupus erythematosus.

DR. ZEISLER, to illustrate how difficult it was to differentiate between lupus vulgaris and lupus erythematosus, mentioned a case which occurred in his practice years ago. The patient was a clergyman who had a peculiar patch on one cheek. He went to Europe and consulted two such eminent dermatologists as Kaposi and Besnier, one of whom made a diagnosis of lupus erythematosus and the other of lupus vulgaris. The speaker did not believe it was either, but thought it was a case of colloidal degeneration of the skin. He mentioned this to show how men of wide experience could be in doubt about such cases.

DR. CORLETT thought the discussion as to the relation between lupus erythematosus and lupus vulgaris, should be reserved for some of the cases shown by DR. Ormsby. To him the case under discussion did not belong to that category. He had seen a number of colored patients in his clinical work and lupus erythematosus in the colored man presented a whitish, branny appearance, with the atrophic condition following. This case appeared to him to be one of lupus vulgaris of long standing, and the only question in diagnosis would be between lupus vulgaris and lues, but he thought it was the former.

DR. PUSEY said that his experience bore out that of DR. Corlett. A few years ago, DR. Pardee showed a case of lupus erythematosus in a negro in which there was loss of pigment over the entire area. Cases of lupus erythematosus declared themselves in the negro by the loss of pigment over the entire area.

Lymphangiectodes (Crocker). Presented by DR. McEWEN.

This case was shown to the Chicago Dermatological Society at the January, 1909, meeting, the report of which was published in THE JOURNAL for October, 1909. Since that time there had been a continual improvement under rather intermittent radiotherapy until, when shown to the meeting, but a few of the vesicular lesions were present.

Case for Diagnosis. Presented by DR. STEPHEN C. GLIDDEN (by invitation).

This case was reported by DR. Glidden in the Illinois State Medical Journal for December, 1909, as a rare case of pemphigus requiring surgical treatment.

On the day before presentation at the meeting, a new lesion, three by four inches, appeared across the front of the leg. It appeared as a bulla filled with bloody serum. The skin showed relies of former

lesions, as depicted in the photographs illustrating the original report. After the dressing of the patient following her presentation to the members, she lapsed into the hysterical sleep described in the original report, from which she was aroused by strong pressure on the ovarian region.

DR. ZEISLER understood that this case had been published under the name of pemphigus. He had read a description of it in the *Illinois State Medical Journal* recently, and in doing so, was rather puzzled as to what induced the author to term this a case of pemphigus. After seeing the case, he would disagree with the author as to its being a case of pemphigus, because according to his knowledge of that disease, the case did not suggest anything like that. The patient presented multiple patches of gangræne of the skin. Whether these were factitious or not, as Dr. Ormsby who had seen the case some time ago, was inclined to think, he did not know. It was unnecessary to force a factitious element into this case. He thought it was one of hysterical gangræne of the skin.

DR. MCEWEN suggested that before the case was discussed further, Dr. Glidden describe, as accurately as possible, the manner in which the bandage was applied to the lesion which had last appeared.

DR. GLIDDEN, responding to Dr. McEwen's suggestion, said the first dressing was a piece of gauze applied over the lesion, and over this simply a combination of cotton and gauze, then a gauze roller which was sealed with an adhesive plaster. He gave the bandage a particular turn and knew that it had not been disturbed. He had found the bandage the same as when he had applied it.

DR. CORLETT said he thought the members would disagree as to the nature of the lesions presented in this case. This matter had been discussed in the American Dermatological Association many times. A few days ago, in reading a discussion, he saw Dr. Wende's statement to the effect that he believed there were two kinds of lesions, those which were produced artificially and those due to spontaneous changes. His own experience led him to concur in this opinion. The subject was one in which he was interested because a number of years ago he published a case with a colored photograph in THE JOURNAL. That case, in many respects, bore a close resemblance to the present one. The lesions were not so extensive and he took special pains at the time to ascertain whether or not they were self-inflicted. The case was reported as one of spontaneous gangræne of the skin and he was still of the same opinion. He thought Dr. Glidden's case was one of spontaneous gangræne of the skin in a hysterical patient. Since reporting this case, several others had come under his observation and while he believed many were self-inflicted, as he had been able to demonstrate, yet there were also cases in which the term spontaneous gangræne might be applied.

DR. FOSTER did not believe that any member present could produce such a lesion artificially with any substance known to him; such a gangrænous looking patch as occurred in this case in twenty-four hours. He thought the case was one of hysterical gangræne of the skin from some unknown cause.

DR. WENDE thought that the case corresponded with the majority of its kind. It was necessary to have such a patient under observation for a long time before one could give an intelligent opinion. He held that in cases of this nature there were two conditions, one spontaneous and the other self-inflicted, and when Dr. Glidden offered proof that these lesions appeared under the dressings spontaneously, he was inclined to think that the dressings had not been changed. It was difficult to imagine what chemical or other agent could produce such lesions. Nevertheless, Dr. Glidden's case presented some features

which were different from the one the speaker reported a few years ago as one of spontaneous gangræne appearing in a neurotic individual. (*Jour. Cutan. Dis.*, 1900, p. 548). He left out entirely the question of cutaneous lesions in that case, and looked at it from the development of the beginning of the lesion on the hand. The lesions corresponded to a progressive or advancing neuritis. It began on the fingers first, in the peripheral element of the ulnar nerve, and went up the arm over the anterior part of the chest and back, involving the anterior and posterior branches of the spinal nerves. The lesions did not repeat themselves after going up the arm and over the places they previously occupied. In the face of evidence of this kind, one could hardly say that the condition itself was self-inflicted.

DR. SCHALEK said that he could not understand the nature of hysterical gangræne of the skin. Hysteria might produce all kinds of functional disturbances, but it was only a central nervous disorder, which interfered with the peripheral circulation, that could cause the pathological conditions necessary in local gangræne.

DR. HYDE stated that he and his colleagues had had their full share of similar cases, and a certain number of these patients had "confessed." These confessions had usually been made not to the physicians, but to someone outside of the medical profession. In one case for instance, the Mother Superior of a Roman Catholic Convent, extorted a confession from a young woman who had endured amputation of the thumb after apparently spontaneous gangræne had developed there. The patient, furthermore, developed a lesion under a bandage which it was supposed she could not remove. When physicians brought cases of this kind to experts, the diagnosis of artificial dermatitis often made the physician indignant, as he had not recognized the true nature of the case; and he often combated the opinion of the dermatologist when the patient was returned to the family, who were also not less indignant when they learned the character of the diagnosis. As a rule, these diagnoses had better be kept quite in reserve. Discussions on this question would probably take place as long as there was a dermatological society. He recalled being present at a meeting when a case similar to that under discussion was presented. At the time, Dr. Duhring took strong grounds in favor of the position taken to-day by Dr. Zeisler.

Since the days of the early writers on medicine in England—and Dr. Foster would confirm this—hysterical patients had been the rock upon which the reputation of many eminent professional men had gone to wreck. These patients were the best fitted of any class to deceive the physician, and they were exceedingly ingenious in diverting him from a correct diagnosis. The speaker did not know anything about spontaneous gangræne. He had never seen a case which was not due to some such cause as that suggested by the case of Dr. Glidden.

DR. ORMSBY, in order to put Dr. Glidden and himself in a right light in regard to this case, said that he happened to be in Danville and saw the patient at Dr. Glidden's invitation, at which time she exhibited the peculiar hysterical phenomena demonstrated when presented to this Society. The patient knew that she was going to be seen by some physician and she presented several new lesions that day. That might mean she produced the lesions herself, or there might be some autosuggestion in the case. For instance, the French physician believed that if a patient were told she would have a lesion in a certain place, it would so operate upon her mind that such a lesion would occur in the place designated. Dr. Glidden early considered the possibility of a factitious dermatitis in the case, but on more extended observation decided against this element. The speaker's suggestion of a factitious element in this case was founded

on experience with several similar cases, in most all of which this was eventually proven. Dr. Hyde, Dr. Montgomery, and the speaker had seen many patients, during the last several years, suffering with hysterical gangræne of the skin and, in the major portion, they were proven to be self-inflicted. A spontaneous development was proven in none. This patient should be kept in the hospital under the care of people who could have her observed both day and night. The only kind of bandage that such a patient could not imitate would be a plaster-of-Paris cast or a starch bandage, for it would be impossible to remove these. These patients, Dr. Ormsby said, were cunning; they were very much like opium takers, in that they would lead the physician to believe one thing while they were doing something else. The lesions in the case under discussion might be produced by several different things as, for instances, carbolic acid, cantharides, etc. She was known to have purchased ammonia. Finally, if this patient were kept under proper supervision for a reasonable time and carefully watched, and still had lesions, he would then be only too glad to admit the spontaneous occurrence of the lesions.

DR. ZEISLER did not believe the subject should be considered in a jocular manner. This and similar cases emphasized the importance of the dermatologist being trained in neurology. Men like Charcot understood these cases better. We could not laugh away lesions that were produced by suggestion, and we could not abandon such cases without due consideration of the neurological elements. Unfortunately, dermatologists were not sufficiently trained in neurology to fully explain certain points that arose in connection with these cases.

DR. WENDE said that in the case he formerly reported, he had had a neurologist associated with him. The patient was in a hospital; they had used plaster-of-Paris dressings and they had employed a seal entirely different from all others. They took every precaution, but in spite of it, lesions developed under the dressings.

DR. GLIDDEN said the case had been interesting to him. At first, the lesions occurred abruptly from the unbroken skin, without any red areola around them. Almost invariably the lesions appeared with a clear serous fluid. A great many of the lesions were filled with serum and by cutting off the top of the bulla, one could easily express the serum, otherwise it could not be done. Later on, the lesions appeared as gangrænous patches; within twenty-four or thirty-six hours following the removal of the top of the lesion. In the last three or four months lesions had appeared above the knee, with the exception of one or two on the arm, and these contained clear serum. Below, they contained bloody serum and became gangrænous in a short time, and that was the reason why he could not think of it as a case of hysterical gangræne. He did not see why the lesions above should contain clear serum and those below develop a gangrænous condition.

Lichen Planus Atrophicus. Presented by DR. ORMSBY.

This was the case of a patient aged forty-two; duration of disease, on first examination, fourteen months. The patient was usually nervous; otherwise the family and personal history were negative. The disease began on the right side of the body over the clavicle, with pin-head-sized white lesions, six or eight in number, which gradually fused. New lesions appeared gradually until the present areas were involved; the region over the clavicles extended over the shoulders to the back, with many lesions situated on the abdomen. On close examination, the lesions were found to be irregular, white papules, many of which had

from two to five or more blackish plugs on their surfaces. In places they were grouped, forming patches. There had been no subjective sensations. As a result of eight X-ray treatments during August and September, the lesions had undergone involution and, at the time of exhibition, were represented largely by the relics of the former condition.

This case and the one already exhibited by the speaker, were practically identical with a case reported in THE JOURNAL (1907, xxv, No. 1,) by Dr. Montgomery and the exhibitor. These three patients showed lesions similar in character and location to those originally reported by Hallopeau under the title used here. A full clinical and histological report was published in connection with the first case. Radiotherapy gave the best results in the management of these cases.

Lichen Planus Hypertrophicus. Presented by DR. ZEISLER.

The patient was a woman, thirty-eight years of age. The present disease began two years ago. When the case was presented, the arms and legs alone were involved. Two symmetrical, slightly raised, dark-red plaques, measuring two by five inches, were present on the elbows and extensor surfaces of the forearms. Both palms showed patches of hyperkeratosis which were contiguous to typical lichen planus papules on the wrists. On the thighs, over the vastus internus, were grouped lichen planus papules, and streaks and lines of identical lesions were present on the legs. There were, in addition, hypertrophic plaques on the legs and soles of the feet. The mucous membranes were free of lesions. Itching was bitterly complained of and the effects of scratching were evident.

DR. ANTHONY stated that he had seen this case before, in the clinic. He thought the differential diagnosis rested between chronic eczema with lichenification, and *névrodermite*; he had excluded the latter and considered the case to be one of eczema with lichenification.

DR. PUSEY protested against the introduction of the new French term *névrodermite*. In his opinion it was simply adding to dermatology a new nebulous conception without sharp definition, and only made the existing confusion worse. In his opinion the French had a good deal to answer for, in their introduction into dermatology of these many indefinite terms describing unestablished pathological conditions, of which *névrodermite* was the latest example.

DR. ZEISLER fully agreed with Dr. Pusey and was reminded, when he heard such terms, of a word which Kaposi used in his time, namely, "Verlagenheits-Diagnose," meaning a diagnosis of embarrassment. Such a diagnosis, of course, meant absolutely nothing. The neurological element was present in many skin diseases. He was very glad, however, that Dr. Anthony had expressed his opinion of the case. If it were a case of eczema, then he must confess that he did not know anything about that disease. He did not see the first elements of eczema in the case, because he was able to show lesions on the lower limb which were typical hypertrophic patches, such as one would see in lichen planus hypertrophicus.

DR. ANTHONY protested against the remarks of both the preceding speakers in regard to *nérrodermite* as a distinct type of disease. It was undoubtedly a disease of itself, as its histology showed, which was in no way like the histology of lichen planus. If they would read the article by Fordyce in THE JOURNAL, they would find that he regarded it a distinct type of disease.

Hyperkeratosis Due to Lues. Presented by DR. ZEISLER.

The patient was a colored woman, fifty-two years of age. The palms, and especially the soles, were the sites of patches of hyperkeratosis. A few isolated, papulo-squamous lesions, the size of a silver quarter, were present on the legs. The crest of one tibia was the site of peculiar, irregular nodosities, which were confirmatory of the dermatosis.

DR. HYDE asked whether the patient had been taking arsenic.

DR. ZEISLER replied that that had been excluded by taking the history. The use of that drug would not explain the patches which were seen on the lower part of the legs, nor the peculiar nodosities which could be felt on the tibia.

DR. PARDEE said the patient had not taken any arsenic.

DR. RAVOGLI said there was a great deal of difference between hyperkeratosis from lichen planus and that from other causes. Hyperkeratosis from arsenic, however, was so characteristic that once seen it could be easily recognized. In a case of this kind the soles of the feet and the palms of the hands showed small, hard protuberances, which at times became ulcerated and in appearance looked like small epitheliomata. He found this condition entirely different from that accompanying lichen planus. In the case which was shown, the lesions had the appearance of the form of the so-called psoriasis palmaris or psoriasis plantaris, which was syphilitic in origin. There was no hyperkeratosis present, but rather a parakeratosis. The condition was unmistakably one of papulo-squamous syphilide of the palms, which was a deep and a late manifestation of lues. The presence on the tibia of hard nodules supported the diagnosis of syphilis; these were the results of periostitis.

Case for Diagnosis: An Infection Involving the Skin and Subcutaneous Tissues. Presented by DR. RICHARD OLESON (by invitation).

The patient was a Dane, twenty-two years old, whose family history was negative, except that he was one of a pair of twins, and came from a very strong, sturdy stock, and was employed in June, 1906, at the Agricultural Department of the Illinois State University, at Urbana, in the division of Dairy Husbandry. A wart on one of the fingers of his right hand had annoyed him and it was removed. Before healing had taken place he was called on to administer medicine to some ailing calves. The disease from which the animals suffered had not been diagnosed; they died soon after. While they were at the height of their sickness, they were afflicted with dyspnœa and profuse dribbly salivation, and when the patient attended them, his hands came in contact with this saliva. Shortly afterward, on June 27, 1906, he became acutely ill with a temperature of 103° F., profuse pers-

piration, rapid pulse, and a feeling of pain and soreness in the right axillary region. At that time the site of the wart presented a small unhealed area discharging a little serum but no pus. The secondary manifestation was not actually located in the axilla proper, but appeared as a swollen, tender area simulating enlarged glands, extending down along the anterior margin of the tendon of the pectoralis major onto the side of the thorax. When this was opened, no pus was found, but there was a fairly free discharge of thin serous fluid. Later on, as the area appeared to enlarge, a second incision was made farther back in the axilla, and thorough drainage instituted. The local symptoms were relieved and on July 30, 1906, he was discharged from the hospital at Urbana with a small unhealed sinus which would, it was anticipated, soon close.

Dr. Oleson first saw the patient on August 10, 1906. At that time the sinus admitted a probe from its opening on the thoracic wall, just under the pectoralis tendon, upward in the general direction of the vertebral column to a point beyond the clavicle. This, with a marked cervical scoliosis, suggested at once an anomalous case of cervical Pott's disease. But a brief examination proved this diagnosis to be faulty. In spite of surgical and X-ray treatment the disease gradually became worse.

In the latter part of March, 1907, he presented marked evidence of systemic infection. The morning remissions of the temperature to normal were succeeded by evening elevations averaging 102° F.; he was emaciated, with marked ashy-gray Hippocratic facies; his pulse was about 130. Beneath the axilla on the thoracic wall, was a large ulcer the size of a man's palm, with radiating sinuses, extending through the adjacent subcutaneous connective tissue. The ulcer was surrounded and the sinuses were lined with exuberant, pale, flabby granulations, bleeding freely on the least touch, discharging large quantities of seropus, but having no tendency to heal.

From March 28 to September 2, 1907, he was treated by free incision and excision of the affected areas, irrigations with various aseptic and antiseptic solutions, insufflations with one kind of dusting powder after another and drainage by tubes and by gauze, with considerable improvement in his general condition but an actual extension of the process locally. The disease spread by attacking the planes of fascia, destroying them, obliterating the blood vessels, and causing necrosis of the overlying skin or underlying bone by cutting off its nourishment. It attacked the periosteum, or probably more properly, perichondrium, for it was chiefly the covering of the costo-chondral and chondro-sternal junctions that was affected—but never the skin, muscle, nor the actual substance of bone. Wherever, in attempting to excise it, new fascial planes were opened, fresh areas for extension were apparently offered

so that by September, some fourteen months after the initial infection, the undermined region extended from the xiphoid appendix to the inner margin of the right scapula, and from a point some two inches above the clavicle to another point an equal distance below the costal margin, with an extension along the back of the right arm down half-way from the shoulder to the elbow.

On September 2, 1907, irrigation and the application of dusting powders were abandoned, the wound being treated with copious aseptic dressings which were changed daily. In the ensuing five months he gained twenty-six pounds and his general condition became excellent, but there was no local improvement although the advancement of the lesions was checked. From January 22, 1908, he received a month of treatment with bismuth injections, but the paste could not be kept in the sinuses. During this period he had an intercurrent lobar pneumonia terminating by crisis, without effect on the main disease.

On March 14, 1908, injections of stock streptococcic and staphylococcic vaccines, from the laboratory of Parke, Davis & Co., were begun, but they had no appreciable effect. At this time a thorough search was made for blastomycetes, actinomycetes, and tubercle bacilli, with negative results.

Dr. Davis, working in Dr. Hektoen's laboratory, readily isolated from the pus a streptococcus, from which an autogenous vaccine was prepared. The first injection was given April 16, 1908, and the peculiar fact appeared that whenever the injections of the dead cocci were made obliquely beneath the skin, so that the vaccine was left lying in the subcutaneous tissue, an ulcer would always occur. The number of bacteria injected did not appear to modify the result. It would require about eleven weeks for one of the ulcers to heal. But if the needle were plunged vertically into the tissues, so that the vaccine was deposited deeply in the muscular tissue, no untoward results were noted. These injections were continued for five months but the condition of the patient showed no appreciable change at the end of this period. On September 15, 1908, all the affected skin and muscular tissue was removed, leaving a raw bleeding surface discharging enormous quantities of sero-pus. Skin grafting was attempted without success, but the wound gradually cicatrized, although it was not completely healed at the time of presentation.

On November 28, 1908, Dr. A. B. Kanavel saw the patient and suggested a wire cage for holding the clothing and dressings away from the wound and allowing sunshine and air to reach it. This proved a most valuable aid in the treatment. The discharge was lessened, with notable healing, until September 26, 1909, when some obscure intercurrent affection developed with a chill, high fever, rheumatoid pains without local arthritic symptoms, and a marked dermatitis about the wound area. At various spots in the healed cicatrix, little vesicles ap-

peared which were distended with a clear fluid. These were never numerous and their fate varied. Some became bullæ, suppurated and broke down into sluggish ulcers, the largest having a diameter of 6 cm. Others were absorbed; a third class developed into small pustules with indurated bases, the lesions crusting over would become converted into hard, almost horny masses which dropped away leaving no trace of their existence. Several of these vesicles and pustules were present at the time the patient was presented to the Society. Dr. Davis had found streptococci in these lesions.

Dr. Oleson said that he desired suggestions as to the best method of treatment of this extremely chronic case. He had found that the greatest improvement followed the mildest measures.

Dr. ORMSBY stated that he had seen this patient two and a half years ago in reference to blastomycosis, but after making microscopic examinations of the pus, and cultural experiments, he was able to rule out that disease. On account of the fact that the disease resembled actinomycosis, he did some work in that line, but demonstrated to his satisfaction that it was not actinomycosis. From that time the case was a puzzle to him. The patient had had the best of surgical care, everything possible having been done for him in a surgical way. The case never was dressed without careful precautions, and yet, instead of improving the condition grew worse. Under most of the treatment instituted, the disease did not improve but gradually extended. As to sodium iodide, the patient could only take small quantities of it because his stomach would not tolerate it. The speaker communicated with the Professor of Animal Industry at Urbana, who had charge of the diseased cattle mentioned in connection with this case, but he had no record of the cause of death in these animals, so that it was impossible to trace any ætiological relationship from this standpoint. As the patient had previously been perfectly healthy, his apparent lack of resistance to this infection made the case unique.

DR. CORLETT recalled the case of a railroad employee, seen ten years ago, who had not been in the country to any extent and who had not associated with cattle in any way. The lesions were very similar to those seen in the case presented by Dr. Oleson, but were not so extensive. He regarded it as a case of tuberculosis of the skin, although histological examination did not demonstrate that fact. The case was treated under his care for a long time without benefit, and finally the patient passed out of his hands. He saw the patient about a year and a half later, when apparently he was entirely well, with, of course, a great deal of scarring. He was much interested in the case and found that after the patient left him, the lesions were dressed with a solution of formaldehyde and had finally healed.

DR. D. KING SMITH said in connection with this case, that he thought benefit was derived from streptococcus vaccine treatment in suitable cases. In one case the vaccine treatment had extended over six months and resulted in a rise of the opsonic index. He had found it unnecessary to take the index continuously in cases of this sort which went on for a long time. While he would not say positively that the improvement was due to the vaccine, the patient's index was raised against the streptococcal infection, and he was inclined to contribute the results to the vaccine therapy together with the hygienic after-treatment.

DR. FUSEY said that he gathered from Dr. Oleson's remarks that, in Dr. Oleson's opinion, this was a case of streptococcus infection in a man practically

without resistance. This view appealed to him because, knowing that the bacteriological examinations were made by competent men, he had no doubt that if the infection had been other than a streptococcus infection it would have been found.

DR. HYDE said he had asked Dr. Davis as to the bare possibility of the bacillus of Ducrey being effective in this case, and Dr. Davis had replied in the negative. One was struck with the resemblance of the process in this case to that of chronic chancroid spreading over the abdomen and the groins. He did not suggest this as a possibility in the diagnosis, but chancroid in the groins and abdomen had been set down by some authors as a form of lupus, and in this patient the subcutaneous sinuses were certainly suggestive. Some of those present had seen the patient shown at the last meeting of the American Dermatological Association held in Philadelphia, where the buttocks of a man were similarly riddled.

DR. OLESON stated, with regard to the possibility of a diagnosis of tuberculosis, that repeated tuberculin inoculations were made and that these were invariably negative. He had never been able to find tubercle bacilli. He was very much interested in the appearance of the lesions which had presented themselves within the last two or three months, namely, the little vesicular, pustular and ulcerating lesions in the scars, and their recurrence from time to time had been very annoying, and he had hoped some suggestions would be made of measures which would check them. He was glad to hear the benefit to be derived from the use of solutions of formaldehyde.

Traumatic Lesions Induced by Rat Bites. Presented by DR. ORMSBY.

At the time of admission to the County Hospital, December 13, 1909, the little patient was five weeks of age. The father stated that four days previously, the infant's mother had gone out for a short time leaving it alone in the house; on her return several rats were attacking the child's face.

On admission, the patient was found to be a poorly nourished, small-sized, pale child, whose face had many incised wounds over both cheeks. Two deep areas of necrosis were present on the sides of the nose, near the inner canthi, which inter-communicated. The sides and end of the tongue were also badly lacerated. The eyes were closed with swelling and secreting purulent material. When presented to the Society, two weeks later, the condition was as follows:

The swelling had disappeared. The incised wounds of the cheek had healed, leaving linear, irregular scars. Near the canthi, on the sides of the nose, were two large sloughing areas of necrosis. The tongue showed a deep sloughing ulcer which was undergoing involution. On account of the emaciation and the peculiar sloughing ulcers, the picture was strongly suggestive of syphilis.*

DR. ZEISLER recalled the case of a small child, only a few months old, who, several years ago, was bitten by a rat; local sloughing followed.

Milia. Presented by DR. HYDE.

The patient was a man, fifty-three years of age; the duration of

* One week after the child was presented to the Society it succumbed.

the disease was four months. The present disorder followed an attack of dermatitis venenata which had lasted three weeks. The dermatitis was severe and produced much swelling of the tissue. The lesions for which he was presented to the Society, were located chiefly on and beneath the chin, with a few on one temple and three groups on one hand. They had a peculiar whitish color and were situated around hair follicles. They were pin-point and millet-seed in size; at a distance they appeared like scales. On the fingers there were three or four pea-sized, reddish scars surrounded by a narrow rim of very fine, yellowish-white papules. These apparently were of the same character as those on the face. No appreciable change had occurred in the lesions after ten days of treatment.

Dermatitis Verrucosa. Presented by DR. ANTHONY.

The patient was a young man who sustained a slight lacerated wound of the hand one year ago. When presented to the Society, there was a lesion resembling verrucous tuberculosis involving about one-third of the palm of the hand, and also a small lesion on the neck. Streptococcus and staphylococcus cultures were obtained from the pus from the hand lesion.

DR. ANTHONY stated, in connection with the case presented by him, that he believed it represented a distinct type of eruption produced by pus micro-organisms. Whether pyogenic infection would produce that form of eruption or some other form, depended upon the depth of penetration of the micro-organisms. This dermatosis was beginning to attract attention, and within the last year Bosellini had written several articles on the subject.

DR. BIDDLE asked whether syphilis had been eliminated.

DR. ANTHONY replied that the patient had a venereal ulcer some time ago. This was not of any special consequence because this eruption represented a distinctive type. Cases of this kind were seen in which syphilis could be absolutely excluded.

Congenital Alopecia. Presented by DR. HYDE.

This case had been referred to by Dr. Hyde in a paper on this subject published in THE JOURNAL for January, 1909.

The patient was born with a growth of hair which fell soon after birth and had not been replaced by other growth, save by a few sparse wisps of hair. The principal point of observation was the recognition, in the fundus of the eye, of the so-called "retinitis albicans." This condition was believed by Dr. Hyde, after studying this case and the others to which attention was called in the paper referred to, as due to general lack of pigment in the choroid, the whole being due to a reversion to a type of some of the aquatic animals.

The patient was now seven years old, and when shown at the meeting presented an eruption upon the face, which had appeared a few months before and which was giving the mother great concern, namely, comedones.

DR. FOSTER stated that about two years ago a woman presented herself at his clinic with alopecia areata universalis. The hair on the head, pubic region, etc., had disappeared. He had rehearsed the various causes of the condition to the students, and among other things, he said that the condition was frequently the result of injury or fright. This was about two years ago. About three weeks ago he received a letter from the claim agent of an insurance company, saying that a suit for \$25,000 damage had been brought by this woman on account of the loss of her hair. It seemed that she was injured in a laundry about the head, was severely frightened, and had been laid up for two weeks. The laundry was insured. The insurance company settled with her and her attention was not directed to this injury as being the cause of the loss of hair until she presented herself at the clinic and, hearing Dr. Foster make that remark, she repeated it to the members of her family who consulted a lawyer and suit was brought for \$25,000 on account of the loss of hair.

He simply instanced this case as a warning that clinicians frequently talked too much in their clinics.

DR. ZEISLER mentioned a case of a young man who met with an accident in a gymnasium. The patient fell down and hurt his spine, was laid up for six weeks, and then his hair fell out, and he developed complete alopecia areata from which he never recovered.

DR. McEWEN said he had seen the case under discussion several times with DR. Hyde, but it was several months since the patient had appeared at the office. To-day there were lesions on the face which were new and which had some bearing on the prognosis. The mother complained especially of the condition of the face. This eruption was practically made up of comedones. If the theory of the formation of comedones were correct, that they were due to the impingement of lanugo hair upon the walls of the hair follicle near the skin surface, producing hyperkeratosis, it would seem as though the hairs were becoming active and that the prognosis was favorable.

DR. SCHALEK was very much interested to know whether alopecia areata was the right name for this affection, because, he believed it might be rather a congenital deformity with possibly an absence of hair follicles. Alopecia areata, as understood, was a falling out of the hair followed in some cases by atrophy of the hair follicles. Intrauterine injury, however, might have had such an effect in this case.

DR. HYDE said that à propos of what DR. Zeisler had stated, he recalled a case in which fright was apparently the only cause of alopecia areata universalis. The patient was a girl, twelve years of age. Her little sister, who was in charge of a nurse, started to roll about on a bed and was balancing on the edge of it, when the nurse gave a shriek and caught the child saving it from a fall. The little patient of twelve, hearing the shriek, was so frightened that she fell in a convulsion and her hair shortly after this fell out in patches.

Idiopathic Multiple Hæmorrhagic Sarcoma (Kaposi). Presented by

DR. LIEBERTHAL.

This case was demonstrated before the Chicago Dermatological Society at the October, 1908, meeting, and published in full in THE JOURNAL for November, 1909. The subsequent history was as follows:

In July, 1909, a board fell upon and bruised his left foot. He was taken to a local homeopathic hospital where, soon afterward, he received X-ray treatment for the skin affection. In October, 1909, he was seen again by the speaker. The cutaneous affection had, in the

short interval from June to October, spread upward to the groins, while the lower parts of the legs had grown considerably worse. The inguinal glands were enlarged. The hard palate was the seat of numerous flat, blue nodules. The patient walked with difficulty on account of the intense hard swelling of the left foot.

Lupus Vulgaris. Presented by DR. ORMSBY.

This was the case of a patient, twelve years old, who presented the ordinary lesions of lupus vulgaris of very superficial type, yet most resistant to treatment. Radiotherapy and phototherapy had been employed, as well as other local and general measures, and finally carbon dioxide snow. Notwithstanding all these measures, new lesions would continue to appear and spread fairly rapidly. The duration of the disease was five years, and the areas involved were about one-third of the entire right side of the face, the upper eyelid, and a dime-sized lesion on the neck. Tuberculosis of the articulations was present in two other members of the family.

Lichen Ruber Moniliformis. Presented by DR. HYDE.

This patient had been presented to the Society on several previous occasions. When originally seen, the lichen planus papules were distributed over the body, especially over the shoulders in front, but also elsewhere in long chains of the type well illustrated in Kaposi's chromolithographs. Under treatment the lesions gradually flattened, and the moniliform condition was much less apparent than it was when the patient was first examined.

Lupus Erythematosus. Presented by DR. ORMSBY.

Mrs. M. C. C.; sixty-nine years of age; duration of disease, twelve years. Past personal history; had had peripheral circulatory disturbances for years. Her fingers would become white and cold. More recently she had had nephritis. The blood pressure at date of examination was 220. Severe gastro-intestinal disturbances had been present.

The scalp lesion was slightly larger than a silver dollar, it was destitute of hair, and the skin was atrophic. At the margins, patulous sebaceous gland orifices were present, and some hornified plugs were irregularly distributed over the surface. On the nose an ordinary patch of discoid lupus erythematosus was present. The point of interest in the case was the association of circulatory changes with lupus erythematosus.

DR. MOOK mentioned a case of Raynaud's disease which was associated with lupus erythematosus.

DR. PUSEY did not wish to question the accuracy of such observers as Dr. Mook, but a few months ago a woman was sent to him who had been operated on for tuberculosis of the abdominal cavity, who had acute lupus erythematosus of the face, and who had lesions on the fingers which might pass for Raynaud's

disease. These lesions had a fairly sharp border, but they would not pass for erythematous lupus without erythematous lupus on the face. A little later, at a meeting of the Association held in Philadelphia one member showed a case of a peculiar eruption on the hands, and some of the other members began to look for erythematous lupus on the head, and it was found about the face and scalp. Sometimes in these cases of acute erythematous lupus one would find lupus erythematosus on the tips of the fingers, and in some of them the eruption manifested itself there without any manifestations of the disease elsewhere.

DR. RAVOGLI said we should be careful in speaking of the chronicity of lupus erythematosus because there were two types of the disease, namely, discoid and diffuse. Lupus erythematosus discoides he considered a form of localized superficial tuberculosis of the skin; while lupus erythematosus disseminatus spread over the body he considered a form of tuberculide. He agreed with Dr. Pusey that lupus erythematosus disseminatus in some cases might simulate Raynaud's disease when the eruption was found on the nose, backs of the hands and fingers, or on the side of the head, but this form had nothing to do with localized lupus erythematosus discoides.

Erythema Toxicum Resembling Lupus Erythematosus. Presented by

DR. ORMSBY.

Mrs. A. H.; aged forty years; duration of disease since first attack, seventeen months. The patient was a delicate, nervous woman with a weak peripheral circulation, the hands and feet being habitually cold. The family and past personal history presented no important facts except that her father died of cancer.

The present trouble began in July, 1908, with an erythematous lesion on the temple that appeared like a mosquito bite. The erythema soon spread until it occupied both temples and the region over the nose, extending over both cheeks in the area selected by lupus erythematosus. Similar lesions occurred on the dorsa of the hands. On the appearance of cold weather, the erythema subsided, leaving a loss of pigment in the affected areas. In January, 1909, the patient went south and on reaching the warm climate, a recurrence happened. This attack persisted until her first visit in June, 1909, being better and worse from time to time.

On examination, on her first visit in June, an erythema was present in parts of the above described areas, with here and there the perfectly white, depigmented skin showing between, which gave a picture very like a superficial lupus erythematosus. There was slight scaling but no subjective symptoms. After one month, the patient went west into the Black Hills and while there went fishing. A sunburn occurred involving both forearms to the elbows, and the face. On her return to Chicago, these areas were the seat of a marked dermatitis which persisted. After two months, the inflammation had subsided somewhat, leaving depigmented areas on the arms with patches of marked erythema over the entire region. At this time the picture was strikingly like that presented in lupus erythematosus. This condition continued

until early in November, when the entire process spontaneously disappeared. When presented at the meeting, all the above described areas showed the loss of pigment and possibly slight atrophy of the skin. The part played by the actinic rays in producing and aggravating the disease was interesting.

DR. RAVOGLI said he would consider it an erythema due probably to some toxic condition of the general system of the patient. The case might be called one of erythema toxicum. Many years ago the speaker saw, in Italy, cases of this kind showing a peculiar erythema over the backs of the hands, forehead, ears and neck, especially on the parts exposed to the sun, which were cases of pellagra. Any form of pronounced infection of the system was capable of producing erythema of macular, papular, or hemorrhagic type. Roseolar eruptions in these cases were due to the poor condition of the haemoglobin, which caused the coloring matter of the blood to be separated.

DR. RAVITCH said that while this was a case perhaps of erythema toxicum, it might later on prove to be one of pellagra. He recalled the case of a woman in Lexington, Kentucky, who gave a similar history. She went to Georgia and developed pellagra in the acute form and died a week after she came to Lexington. The case under discussion might not be a well-developed case of pellagra, but it might be the beginning of that disease. The patient stated that her condition was worse in the Spring, and that she got relief during the winter. This was true of mild cases of pellagra. While it might not be a case of pellagra, the patient should be watched carefully because of the peculiar erythematous patches she had on her arms, which were found in pellagra.

DR. ORMSBY said that this patient had developed her first symptoms after exposure to the sun's rays in July, 1908. The next time it occurred in February, 1909, after exposure to the sun's rays while she was on a fishing trip, the last one being the most severe. She was fishing and had her sleeves rolled up to the elbow and had a typical sunburn. As time passed, the eruption gradually changed from a dermatitis of this type into an erythema closely resembling lupus erythematosus of these areas. It had not the appearance of a case of pellagra, as he had seen several cases of this disease in Illinois during the last few months. The lesions were practically like those of lupus erythematosus. The question of pellagra in this patient had been discussed by Dr. Hyde and himself, and they decided that the case was a toxic erythema in which the actinic rays of the sun had produced a dermatitis somewhat similar to that which was found in cases of pellagra. In their opinion pellagra had been ruled out in the case of this patient.

Lupus Erythematosus. Presented by DR. ORMSBY.

The patient was a girl fourteen years of age. The family history was negative, aside from the fact that one sister had died of tuberculosis of the hip with complications. The past personal history was negative until four years ago, when some enlarged glands were removed surgically from the axilla. One year later, enlarged glands appeared in the neck on the same side (right) and, when presented, marked glandular enlargement extended from the angle of the jaw over the neck and behind the clavicle.

The skin disorder began two and a half years ago on the right side of the face, about one inch below the inner canthus of the eye as

a "scratch" mark. A small angry red spot developed in this area, which gradually spread over the nose and onto the opposite cheek.

When shown at the meeting, in addition to the glands already noted, a reddish scaling area occupied the common area over the nose and cheeks selected by lupus erythematosus, except that the cheek involvement was not so extensive; the entire lesion was scaling and had elevated, regular, well-defined margins. No lupus nodules could be demonstrated.

DR. PUSEY believed that the case was one of lupus erythematosus.

DR. ZEISLER agreed with Dr. Pusey. It was rather early in life for a child fourteen or fifteen years of age to develop lupus erythematosus.

DR. HYDE agreed with Drs. Pusey and Zeisler and added one should be careful in drawing sharply the dividing line between some cases of lupus erythematosus and lupus vulgaris. When he first began to study these cases, he read with some reserve the reports of French dermatologists of cases of lupus erythematosus developing into tuberculosis. He recalled three or four patients with characteristic lesions of lupus erythematosus of the face, who subsequently developed pulmonary tuberculosis.

Carcinoma or Syphilis of the Palate? Presented by DR. ORMSBY.

This was a male patient aged sixty years, Italian, and a cook by occupation. A fairly accurate history of previous lues was obtained. The lesion began three months ago near the centre of the vault of the mouth and spread laterally and posteriorly.

When shown at the meeting, a granulating, indurated ulcer with a raised hard margin occupied about two-fifths of the surface of the roof of the mouth, extending to and involving a small part of the uvula, covering the entire left posterior quadrant of the hard palate. There was no demonstrable regional adenopathy. Some pain was experienced by the patient in all of the teeth in the upper maxilla.*

DR. RAVOGLI stated that from a cursory examination, he thought the case was one of beginning carcinoma, but if the history were carefully investigated, it might be found that syphilis was also present. Anyhow, if the case were syphilitic, he would refer the condition to the development of carcinoma on syphilitic tissues, believing that in the long run this diagnosis would be confirmed.

DR. HYDE stated that with every year of experience, he was more and more impressed with the fact that in these mouth cases with lesions of a doubtful character, in a man who had passed the middle period of life, a syphilis of the past did not necessarily imply a syphilis of the present. In other cases he had studied the symbiosis of syphilis and tuberculosis, but would not discuss that phase of the subject now because it had no bearing on the present case. Dr. Ormsby and he had lately had a sad experience with a group of such cases. In one in particular, there was an unmistakable history of syphilis, where carcinoma developed in the mouth and at first was supposed to be a gumma, going on to

* Since the presentation of this patient a biopsy was performed and a microscopical examination made by Dr. A. H. Brown, House Physician at the County Hospital, which demonstrated the lesion to be carcinomatous.

serious cancerous changes. They had seen group after group of these instances; and if he were asked what form of carcinoma he thought the most dangerous, he would say not that carcinoma which developed from a leucoplakia buccalis, but carcinoma developing in a man who had had syphilis.

DR. PUSEY said the question of whether the man had had syphilis or not was not very important, because syphilis did not render him immune to carcinoma. There was the exuberant growth in this case of carcinoma and not the loss of tissue one would get in syphilis. He thought in this case the disease was carcinoma.

Scrofuloderma. Presented by DR. HYDE.

Mrs. R. F. F.; aged thirty-nine; duration of disease, seven months at the time of the first examination in October. The family history was negative except for the possibility of the patient's mother having died of tuberculosis. Lesions of scrofulo-gummatous type were situated on the buttocks.

Urticaria Pigmentosa. Presented by DR. HYDE.

The patient was the six year old daughter of the last patient. The duration of the disease was five years. The skin showed papular and pigmentary lesions. The former were described as appearing and disappearing from time to time, leaving spots of pigmentation, and not accompanied by much itching.

Photographs Showing Results of Treatment of Lupus Vulgaris with Carbon Dioxide Snow and X-Rays. Presented by DR. SCHALEK.

When first seen by the speaker, the subject, a girl seven years old, had a typical lesion of lupus vulgaris, two inches in diameter, on the right cheek between the eye and the ear, partly ulcerated, with only lying foci of fresh infections, as shown in the first photograph. The diagnosis was confirmed by microscopic examination of tissue. The treatment consisted of freezing the area thirty seconds followed by exposure to the X-rays. The result of two months' treatment was very satisfactory and was to be seen in the second photograph.

DR CORLETT moved that a vote of thanks be extended to the local members of the American Dermatological Association and to the Chicago Dermatological Society for the admirable manner in which they had provided for the entertainment of the members living outside of Chicago.

This motion was seconded and carried, after which the meeting adjourned.

ANDREW PORTER BIDDLE,
Acting Secretary.

REVIEW
of
DERMATOLOGY AND SYPHILIS.
Under the charge of GEORGE M. MAC KEE, M. D.

**SYPHILIS OF THE SKIN AND MUCOUS MEMBRANES,
ATROPHIES, HYPERSTROPHIES, BENIGN
AND MALIGNANT NEW GROWTHS.**

By UDO J. WILE, M. D., New York.

The Proliferating Forms of Cutaneous Syphilides. A. RAVOGLI. *Jour. Am. Med. Assn.*, 1910, liv, No. 1, p. 18.

This is a clinical and histological study of the vegetating and proliferating syphilitic dermatitis, accompanied by photographs, illustrating such lesions in both secondary and tertiary syphilis. The spirochæta pallida was found in the vegetative forms of the secondary lesions, but not in those of the tertiary period. The author believes, however, that in all cases the spirochæta is the starting element of the irritative process, resulting in the production of vegetative lesions. He conceives it likely that in the tertiary lesions, where the spirochætae were not found, that this fact may have been due to its concealment in the deep tissues, or that at this period the spirochæta cannot be stained. The general histological picture was that of a papillary hypertrophy, plasma cell infiltration and collagenous replacement of elastic tissue.

Three Cases of Ichthyosis Follicularis Associated with Baldness. J. M. H. MAC LEOD. *Brit. Jour. Dermat.*, 1909, xxi, No. 6, p. 165.

The writer presents the results of his study upon three cases of follicular disease associated with baldness, in one family. In all three cases there was absence of eyebrows and lashes; in two of the three, the scalp was almost completely bald. The skin changes were in all instances alike, and consisted in the plugging up of the hair follicles with pin-head-sized papules, surmounted by horny spines, the papules being the color of the normal skin, and not surrounded by an inflammatory zone. The skin was harsh and dry, from the presence of a fine sealiness, and in certain regions the latter was sufficient, the writer thinks, to merit the designation of a mild ichthyosis. There were no subjective symptoms; the sweat glands did not seem to be affected, as all the patients perspired freely on exertion. In all three of the cases, the skin at birth had been normal and the affection had begun in each instance during the first two years of life, and was first noticed on the face.

From his histological studies, the author believes the primary change to have been a hyperkeratosis not only of the follicles, but also of the epidermis intervening between them, leading to the formation

of a horny network over the epidermis, similar to that which formed the peripheral part of the horny plug. There was in places a slight tendency to desquamation, suggesting a mild ichthyosis. Atrophy of the follicles and destruction of the hairs resulted from mechanical pressure due to plugging of the follicular orifice. A mild inflammatory reaction about the follicles, the author believes to be a secondary process.

Mac Leod discusses at some length the various diseases associated with horny plugs in the follicles. He compares his own cases with those described by Brocq as, "keratosis pilaire blanche" or "keratosis supra-follicularis" of Unna, differing from them only in being non-inflammatory in origin. The histological picture is well illustrated in two excellent photomicrographs.

Acanthosis Nigricans a Symptom of a Disorder of the Abdominal Sympathetic. S. POLLITZER. *Jour. Am. Med. Assn.*, 1909, liii, No. 17, p. 1369.

The writer collects from the literature, including the original case first described by him, and one subsequently seen and studied, fifty-two cases of true acanthosis nigricans. Of these, thirty-five occurred in individuals over twenty years of age, and they are classed as the adult cases. Of these, again, twenty-two, or over sixty per cent., were suffering from carcinoma, and in six more the presence of abdominal cancer was on clinical grounds in a high degree probable. These figures, 80 per cent. of the total number of cases, do not allow a doubt as to the relation between acanthosis nigricans and abdominal cancer. The author concludes, "On physiologic grounds we may assume an interference with the functions of the abdominal sympathetic as the immediate link in the causation of the cutaneous manifestations."

Cutaneous Pigmentation as an Incomplete Form of von Recklinghausen's Disease, with Remarks on the Classification of Incomplete and Anomalous Forms of von Recklinghausen's Disease. F. P. WEBER. *Brit. Jour. Dermat.*, 1909, xxi, No. 2, p. 49.

Weber divides anomalous forms of von Recklinghausen's disease into four groups:

1. Cases of plexiform neuromata unaccompanied by multiple molluscous tumors of the skin, with or without cutaneous pigmentation.
2. Cases of molluscous tumors of the skin unaccompanied by any obvious neuro-fibromatosis of nerve trunks, with or without decided cutaneous pigmentation.
3. Cases of pigmentation of the skin not (at least not yet) accompanied by obvious neuro-fibromata of nerve trunks or cutaneo-neuro-fibromata (molluscous tumors).
4. Anomalous cases of neuro-fibromatosis, complicated by the co-existence of bony or epidermic (papillomatous) changes.

He presents a case conforming to class three, in a girl of fourteen years. The patient showed three kinds of pigmentary changes: Diffuse

brownish patches merging gradually into the ordinary skin; brown spots and small patches plentifully scattered over the trunk; and a small group of very dark, almost black spots, on the left side of the thorax, resembling a group of pigment nævi, but not raised above the general level of the skin. The pigmentation had begun when the child was about eighteen months old. At the first examination, only one small flaccid molluscous tumor was found on the lower part of the back. At this time, the possibility that the case was one of incomplete Recklinghausen's disease suggested itself to the author. Three years later, this diagnosis was confirmed by a second examination, which revealed the presence of several typical tumors, which had developed in various parts of the body. The pigmentation as a whole had become darker, and new brownish spots had appeared.

Morpheæ-Like Epithelioma. M. B. HARTZELL. *Jour. Am. Med. Assn.*, 1909, liii, No. 4, p. 262.

Three cases are herein reported in which lesions clinically like morpheæ were shown to be of epitheliomatous nature. In one case, the lesion recurred after having disappeared under X-Ray treatment. In the remaining two cases the diagnosis of epithelioma was established by biopsy and subsequent histological examination. In all three cases ulceration of the morpheæ-like patch had taken place. The writer finds no mention of this form of epithelioma in the text-books on dermatology, but a reference in the literature, is found in a case presented by Danlos. (*Bull. Soc. franc. de dermat. et de syph.*, 1899, x, p. 656).

Syphilis of the Stomach and Intestines. A. D. COHN. *Am. Jour. Med. Sc.*, 1909, cxxxviii, No. 5, p. 685.

Cohn herein describes the symptom complex of syphilis of the stomach and confirms von Zeissl's opinion regarding the syphilitic haemorrhagic diathesis.

According to Cohn gastric lues appears in three forms: (1, ulcer; (2), tumor; (3), pyloric stenosis. The tumors or gummata may simulate a malignant growth. Syphilitic ulcers may be confused with other types of gastric ulcer. Stenosis of the pylorus resulting from syphilis, may be encountered in patients ranging in age from twenty-three to seventy-eight years. It is more common in males than in females and may be either hereditary or acquired. The writer has noted three types of syphilitic ulcers of the stomach. The first type is where there has been a history of gastric disturbance for a considerable period before the ulcer developed. Then there is the acute variety, and finally the ulcer with a latent course and which is so often associated with haemorrhages.

To avoid irritating the stomach and intestines, in the treatment of syphilis of these organs, both mercury and iodine should be given other than by ingestion. The author relates in detail the history of two cases of gastric syphilis which were mistaken and operated upon for carcinoma.

OBITUARY.

HENRY GRANGER PIFFARD.

HENRY GRANGER PIFFARD, B. A., M. D., L. L. D., long and favorably known in America and Europe for his knowledge of and valuable contributions to dermatology and other branches of medical science, died on June 8, 1910, of pneumonia, after three days' illness. A year or two ago some of his personal friends observed that he was evidently failing in health, due, it was believed, to an over-studious life, which deprived him of that proper amount of sleep and recreation necessary for health and a normal physical condition.

When Dr. Piffard was engaged in the study of whatever subject he was especially interested in at that particular time, he devoted all his great mental energies to it, and having an observing and scientific mind, original ideas were a frequent outcome and medical science was advanced. He was an original investigator in several of the branches of medicine and especially in dermatology, therapeutics and electricity. It is no doubt correct that he knew more about electricity, and its various uses in medicine than any dermatologist in America, and that knowledge was always conveyed to the profession in the most modest and ethical manner, and the published therapeutic results of his studies in this line could always be relied upon. His interests and activities in medicine and selected subjects were diversified; he was not a so-called "pure specialist," but grappled with marked ability and untiring energy subjects in different branches of medicine and science. He studied only for the pleasure it gave him, and his methods of study and results showed a unique personage and a mind condition bordering on genius. For example, he would study with the greatest activity and zeal a given subject for a time and then suddenly change to quite different line of thought with equal energy and interest. The result of these varied mental activities, recorded in the medical journals as original articles, or in the report of transactions of medical societies, gave Dr. Piffard the deserved international reputation of a scientific physician and also a worthy representative of the best in dermatology in America.

The writer need not refer specifically to the valuable contributions to medical science during the forty-five years of Dr. Piffard's active life, for they are known to all dermatologists who are "*au courant*" with their subject. I shall refer to one subject only as a matter of justice. The credit for the first use of the term tuberculide with its present significance is given to that excellent dermatologist, Darier, but Dr. Piffard used the term in 1892, four years before Darier, for the tuberculoses in general, and this use of the term seems to the writer to be in accord with our present knowledge of the subject.

PLATE LV.



HENRY GRANGER PIFFARD, M. D.

As an expert in the taking of photographs of cutaneous lesions he was unexcelled, as shown by the illustrations used in his volume on diseases of the skin.

Two years ago, in *THE JOURNAL*, Dr. Piffard wrote the obituary notice of Dr. R. W. Taylor, with whom he was on intimate relations for nearly forty years. These two colleagues had much in common, and although Dr. Taylor made more contributions to dermatology than Dr. Piffard, their articles were similar in that they were always real contributions to our then existing knowledge, and medical science was advanced by their labors. The dermatologists of America cannot but regret the passing to the unknown of these early and fruitful workers who gave credit to the country of their work.

The sudden death of Dr. Piffard came as a great shock to all who had the pleasure of his personal friendship. The older members of the New York Dermatological Society especially will miss the colleague of kindly heart, good cheer, and socially good fellowship generally. He was a good debater, and his remarks were always to the point, valuable and instructive. His demise is a personal loss to all his colleagues, and he has left with them only pleasant memories. His name is cherished and his works remain an honorable monument to his unique mental activity.

Dr. Piffard was born in Piffard, New York State, on September 10, 1842. He was graduated B. A. from the University of the City of New York in 1862, and M. D. in 1864, from the same institution. In 1874 he was appointed Professor of Diseases of the Skin in the Medical Department of the University, a position he filled for many years, and was an Emeritus Professor at the time of his death. He was one of the early members of the New York Dermatological Society and was also a member of the American Dermatological Association.

A. R. R.

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FURTHER OBSERVATIONS ON THE TECHNIQUE OF AN EFFICIENT PROCEDURE FOR THE REMOVAL AND CURE OF SUPERFICIAL MALIG- NANT GROWTHS.*

SAMUEL SHERWELL, M. D., Brooklyn, N. Y.

In presenting this list of cases, with further observations thereon, as given in the title of this contribution, I find myself inevitably committed to a paper read before the State Medical Society of New York in January, 1908, written on the same subject. After consideration, I find that I can hardly better, or make the language there employed more concise or emphatic; and so find myself forced as it were to use the same language and arguments as presented on that occasion. The additional new cases are of that same type as those then shown, around the orbits, etc.—and are purposely chosen from among very many others, as exemplifying what can be done by this method when used in the most delicate and dangerous situations and surroundings.

I have had the pleasure of showing a number of these patients before my colleagues at the meetings of the New York Dermatological Society to illustrate the improvement and, as I believe, cure in most, certainly absolute relief and absence of lesions or symptoms for protracted periods in others.

As to the technique, I claim neither entire novelty of method (cauterization or curettage in these affections is almost as old as dermatology), though I have a very decided preference for the escharotic I use; nor do I claim absolute perfection as to result. Still the method seems to me to present so many advantages that I have no hesitation in advocating it before this Association and in recommending it for more general, though not exclusive, use in superficial malignant growths.

* Read before the 34th Annual Meeting of the American Dermatological Association, Washington, D. C., May 3-5, 1910.

My experience in the use of this method, which has never changed, has been coincident and identical, or almost so, with that of my dermatological life and practice—now of nearly forty years—and during that time I have operated on very many hundreds of these cases of malignant growths in this manner. Recurrences or relapses (for this, of course, you will have to take my word) have been comparatively few. I am constantly meeting individuals, almost every day in fact, now perfectly well, from whom I had removed these growths many years ago, so long, in short, that they have to remind me of the fact. I must, I suppose, hazard a conjecture as to percentage of recurrence: I cannot believe it exceeds ten per cent., and I think it, indeed, less—much less—and usually the second operation would diminish even that.

Unfortunately, I have not been favored with photographic facilities until a comparatively recent time—the last two years; since then, however, one of my assistants, Dr. Nathan T. Beers, has taken up this work with enthusiasm, and to him I owe the annexed excellent photographs.

In discussions, etc., in the New York Dermatological Society, I have dwelt on this method of procedure in suitable cases, in, and sometimes I fear, out of season; and more notably in a paper read before this Association at its Tenth Annual Meeting in 1886, entitled: "Remarks on and Queries as to the Relative Frequency of Pathological Changes in Moles and Other Tumors on the Head and Face" which was published in THE JOURNAL in 1887; and in which I recommended this mode of treatment of the disfiguring and dangerous growths above spoken of. I think, even now, that I should like some information, or, at least, some theory on this one point; for it is evident to me that there is a greater tendency to degeneration in these situations than in other parts of the body. To avoid taking up the time of the Association, I would say that all of the foregoing remarks serve only to recommend curettage of these tumors, but curettage of the most pronounced kind. Simple scratching is not enough; *it should be thorough, deep and efficient*. And immediately following this there should be an equally thorough application of an escharotic (the one preferred by me, for good reason, as I believe, being a 60 per cent. solution of the acid nitrate of mercury, Squibb), which has to be allowed to remain, with several reapplications at the time of operation, for varying lengths of time, according to the delicacy or density of the tissues involved. The final step in the operation is the, at least superficial, neutralization of the caustic

agent by some alkaline medium, and for this purpose sodium bicarbonate seems to be the best. A few grains of this salt powdered on and pressed into the wound answers all requirements. This forms immediately a plain scab or crust which should be allowed to remain *in situ* untouched and dry, till it falls, or rather, is pushed off by and with the process of healthy repair beneath, leaving then a healthy scar and usually, I might say, an almost always relatively insignificant or not very noticeable one.

From any of the foregoing statements I am not to be understood as opposing the use—under proper conditions and in proper hands, and in appropriate cases—of other agents for the relief of these conditions. Ablation is, perhaps, to be preferred in pendant and loose portions of the economy, as when the lips, penis and ears are affected, but in many of these cases, notably the ears, less trouble and better results are often attained by what I shall call here my own method. Nor do I wish to disparage at all the wonderful and potential dynamic action of the X-ray and radium in these cases. These agents, however, are not always to be found, as we know, even in the offices of those with dermatological practices; and unless the trouble is situated in inoperable or almost inoperable sites—even then I say and maintain that their action, for a variety of reasons—is not to be preferred.

When either of the latter two agents is used, a great deal of time is taken up. They are not always, as we know, whatever the reason, certain or constant in effect or result; no matter what the skill or experience of the physician may be. As a rule, too, the time and expense of these methods are to be taken into serious consideration. As to the use of liquid air and solid carbon dioxide, they are, in my opinion, necrotic agents, pure and simple; and for reasons hereinafter to be given, are not to be recommended when malignancy exists, at least.

It may be urged that pain might be a deterrent factor in the method I favor. As a matter of fact, I have found this a “*quantité négligeable*” if due care be given to anæsthesia, or analgesia, before, during and after operation.

It would be useless if not absurd before a body like this to dwell on cases of mistaken identity or false diagnosis; but I had to do so in the paper previously referred to, as it was given before a mixed body of medical men at the New York State Medical Society. But I would say here that I have and do use this method in many pseudo-malignant affections such as lupus, tuberculosis

verrucosa cutis, abscesses, cysts after operating, and verrucous growths, with entire satisfaction. In the paper just mentioned I gave a warning against mistaking luetic deformities, etc., for those of a worse nature. One cannot be too cautious. I have had many cases referred to me for operative interference, where specific treatment only was required.

The description of the operative procedure may seem unnecessary to almost all present, but I do not see how I am to avoid it, and it will take but little of your time.

First, then, I have three or four fenestrated dermal curettes (Piffard's) of varying sizes ready. They should not have a knife of razor-like sharpness but a clean wire edge. In cases where a large surface is affected the patient should be put under general anaesthesia, though this often is not necessary, except in surfaces either very deep or over, say, the size of a dollar, otherwise cocaine suffices. Naturally, in extensive surfaces, as around the orbit, it is best to have the anaesthesia general and profound. As to the anaesthetic, there is scarcely a preference. Nitrous oxide gas would be a typical one were it not for the venous engorgement that accompanies its exhibition. Before giving the anaesthetic, the patient is usually given a hypodermatic injection of from one quarter to a third of a grain of morphia with or without atropia, as shall be deemed best, at a distant point of the body. Also a few injections, perhaps three or four, of a two per cent. solution of cocaine should be given in and around the site of the tumor. The patient is then ready. A few pledgets of lint and two or three basins of water, one very hot, should be at hand. The larger curette is used first with decided force into, around and about all parts and edges of the affected area, so as to remove all, or the major part, of the morbid tissue. The smaller curettes then come into play and should be used in all the sinuses and anfractuosties, and, as I have said before, with energy. There need be little fear of injuring sound tissue if employed with any degree of intelligence—the normal skin and tissues being very resistant. It will astonish one not accustomed to this procedure to notice what an amount of fairly good looking tissue will come away easily.

Being satisfied that all that is necessary is accomplished in this way, and this takes but a few moments, ordinarily, the next thing is to stop the bleeding which often, though not grave in character, may be persistent. A mixture of cocaine and adrenalin may be applied to the raw surface and, of course, pressure. But

gradually now, I am coming to the conclusion that most frequently this is wasted time; so I am now commonly in the habit, after saturating the wound with strong solutions of cocaine for a while, of using the Paquelin cautery at a mild-cherry red, the lightest possible touch of which usually blocks the "spurters" or stops the oozing from lacerated veins. Then the anæsthesia, either general or local, being made as thorough as possible, the acid nitrate of mercury in full strength (60 per cent.), is mopped on with little pledgets of absorbent cotton wrapped around a tooth-pick or match. This effectually stops all weeping, and, so to speak, cooks the tissues. This application has to be repeated two, three or several times, according to conditions and the acid should be allowed to remain unneutralized for a varying time, according to the conditions, about, we will say, from five to twenty minutes would be about the limits. This is naturally the most painful part of the whole procedure, but after the first touch the anæsthetized patient does not seem conscious of its reapplication, as a rule. After consciousness returns, or, at the end of minor operations under local anæsthesia, another hypodermatic injection of morphia may, and ordinarily should be given so that the patient remains only conscious of a disagreeable sensation, or hardly that. Of course, no fear of opium addiction is to be thought of in these cases.

The last step in the operation is the neutralization of the acid. This is done when the wound is dry or nearly so. Then a layer of sodium bicarbonate is taken and pressed down into and upon the wound so as to make it about correspond to the niveau of the skin; and all is done. This layer of sodium turns yellow pretty promptly as a result of the double decomposition of the sodium and mercury, and in a day or so becomes a black and, if kept dry, a firmly adherent scab, to be thrown off in a varying time, usually between two and three weeks. As I have said, this area should be kept as dry as possible and the patient warned about touching or wetting it.

Ordinarily, there will be for the first two or three days a good deal of inflammatory reaction around the site of the operation. If on the face, it will cause apprehension in the anxious or ignorant; thoughts of erysipelas, etc. This inflammation I regard as a blessing and for the following reasons: I believe that the inflammation and the escharotic together break down the less viable cells of which we know these malignant growths are composed, and that the absorption of the potent and somewhat specific escharotic used, so penetrates into the lymphatics and neighboring tissues

that the effect is even better than a very thorough ablation by the knife of tissue far outside the line of apparent infection. In this way, and no other, can I account for what I have stated, as to the small and exceptional chances and liability to recurrence.

I must, too, lay some stress on my after-treatment of these tumors; especially carcinomata, epitheliomata and sarcomata. I always give arsenic for protracted periods; in the form of Fowler's solution, usually adding Donovan's solution in mild conjunction. I firmly believe it to have a prophylactic and inhibitive effect in at least some of these morbid neoplasms. I am convinced of its efficacy in this way in sarcomata, though I know, not all respond. And again, as I have sometimes done before, I respectfully submit, as record, a paper of mine on this subject which was published in the *American Journal of the Medical Sciences* for October, 1892, giving the history of a patient affected with multiple sarcomatous lesions.

As before said, I have a settled conviction that arsenic (perhaps better in some forms than others) does have either a conservative action as regards embryonic cell formation, or a destructive action in those of a cacoplastic nature; perhaps in both ways. Also, to repeat myself, that the mercuric nitrate and what part thereof is imbibed in the structure adjacent to the site of operation, has a great influence, together with the intense inflammation, in breaking down and necrosing such weakened cells; thereby surpassing ordinary ablation or simple curettage.

I cannot close this paper without mentioning and thanking my colleagues, former pupils and assistants—Drs. Steers and Raynor of the Brooklyn Eye and Ear Hospital—for their aid in most of these cases now to be submitted, and others.

I may state that the mode in which the eye is protected during operation, especially in those cases in which the sclerotic conjunctiva is affected, and which is often curetted and cauterized in the same way as other tissues, and not infrequently up to the margin of the cornea, is to take a pledget of absorbent cotton of fitting size, to soak the same in a moderately saturated solution of sodium bicarbonate; then, having made a fairly firm mass of the same by squeezing out redundant moisture, to mould and hold it in firm and proper apposition to parts to be protected. I am glad to say that I have never lost an eye or dimmed a cornea yet; and still, it has been necessary often after curettage to allow the full strength

of the nitrate of mercury solution to remain in such sites for nearly, if not quite, five minutes.

The annexed cases and photographs thereof, I will briefly give in as nearly as possible their order.

(1). Mr. C. V. S., born in England. This gentleman died recently at the advanced age of ninety-seven. I have no photograph of him previous to operation. He had suffered many years with rodent ulcer, it having commenced as a mole on the ala of the nose (right). The photograph presented (Fig 1) was taken about two months before his death, up to the minute before which he was a hearty old man. The operation was a thorough one; a large amount of tissue was taken away and a very thorough application of acid nitrate of mercury made. This operation took place in the summer of 1885. No recurrence.

(2). Mrs. E. B. About sixty-five years of age. Married. Operation Nov 8, 1907. This case of which I have also no photograph of the lesion previous to operation, affected the right orbit, nose and brow; also the tear ducts on that side and the membranes, etc. of the lids near the inner canthus. The case resembled that shown as No. 6, only differing in being far greater in extent and severity. The photograph now given (Fig. 2) shows her present state. The cosmetic result is perfect; a scarcely noticeable scar, although the lesion was curetted to the bone and well into the orbit, etc. The tear ducts are still patent; there is no epiphora. The scab, extending somewhat deeply under the eyeball, I removed with some difficulty nine weeks after the operation. Not the slightest recurrence has manifested itself up to the present writing.

(3). Mr. J. A. German by birth. About sixty-four years of age. Epithelioma of the lower lid (left) and involving the sclerotic mucous membrane. Operated on in the usual manner January 20, 1908. This was the first picture taken for me by my friend, Dr. Beers, previous to operation (Fig. 3) The second photograph represents the patient's state to-day (Fig. 4). About three or four months ago he had a slight thickening occurring at the outer canthus, uncertain in character. I took no chances and did a slight erosion followed by a mild use of the escharotic usually used.

(4). Mr. D. W. German, fifty-eight years of age. Rodent ulcer of left eyelid, situated at the outer canthus. It had been present many years as a slight lesion, but followed by rapid extension. Operation on Oct. 8, 1908. Nothing noteworthy; perfect result. No sign of recurrence. I saw the patient a few weeks ago (Figs. 5-6).

(5). Mrs. John G. A native of England. Fifty-seven years of age. Referred to me by a prominent ophthalmologist attached to the Brooklyn Eye and Ear Hospital. Epithelioma of lower lid of the

left eye, most marked in the centre but extending nearly to the canthus on both sides, and also extending to the conjunctivæ of the lids and lower sclerotic hemisphere. Operation in usual manner on May 12, 1909.

(6). Mrs. Mary F. Born in Ireland. About sixty-four years of age. Typical epithelioma involving inner canthus of right eye and lower lid, tear ducts, etc. It extended to the nose and a considerable distance into the orbit. This case bore a great resemblance to the one given as No. 2 in this list; but that was much more severe and grave in character. Operation as usual on June 5, 1909. The accompanying picture of the result was taken a few months since. When last seen, a short time ago, the result was the same, but even more improved in cosmetic appearance (Figs. 7-8).

(7). Mrs. Julien E. Fifty-nine years of age. Married. Epithelioma of many years' duration, then rapidly increasing and pronounced inoperable by surgeons consulted. The X-ray in this case, as in many of these cases had been employed a great number of times, but with no effect. Both illustrations, before and after operation, are very good. The lesions extended, as is manifest, over portions of both lids, particularly on the right eye. It extended very deeply down into the tissues, involving the bony parts of the nose and apparently the inferior ethmoidal surfaces. Operation performed July 24, 1909. Very deep and thorough curettage caused a somewhat alarming haemorrhage, which was controlled by the Paquelin cautery freely used; and subsequent equally thorough application of acid nitrate of mercury solution. I should judge that nearly a dram of the full strength solution was used. The patient was thoroughly anaesthetized (ether) during the operation. Hypodermatic injections of morphia and atropia were given before and after operation. She was feeling comfortable when seen early the next day, and had not suffered much, she said. I saw her a few days since and not the slightest evidence of recurrence exists so far (Figs. 9-10).

(8). Mrs. O. H. A native of Ireland. Sixty-eight years of age. Epithelioma of long duration on right lower lid and neighboring tissue, both internal and external. Operation Oct. 15, 1909. It was rendered quite difficult by the deep setting of the eye in the orbit and great care was needed. The sclerotic conjunctiva was also affected, and that of the lid to a large extent. The best possible results seem to have been obtained. The photograph of the result was taken but a few days since (Figs. 11-12).

(9). Mr. George F. U. S., about fifty-three years old. A case of great interest. It commenced in the usual way from a mole on the side of the nose. It has been for years virtually trifled with by many medical men, by mild caustic applications, salves, partial ablation and the like. It had also been subjected to X-ray and to more radical

and scientific interference at a New York Clinic, with either liquid air or the solid carbon dioxide, or both, but without results that satisfied him, at least. He came to my clinic and the usual operation was performed in early February, 1910. The result was perfectly satisfactory, although from an esthetic standpoint it was not as perfect as that generally obtained owing to the fact that the tears ran over that portion of the cheek. I saw him a few days ago and am satisfied with the result, as is he also.

(10). Mr. Owen Q. Thirty-eight years of age. Born in the United States, occupation, driver. Operated on Dec. 23, 1909. This case is one of great interest, being in one unusually young for this affection. Epithelioma of about thirteen years' duration. A variety of treatments had been used. The lesion had healed and recurred several times under X-ray treatment. He has had about 100 exposures at various times, but lately the effect had been negative, if not harmful. The cheek, lid, conjunctiva and inner portion of the orbit on the right side were all affected. He was referred to me by Dr. MacKee. I took it as somewhat like a surgical dare. The operation was as usual. All parts affected were removed as perfectly as possible, the lids everted and curetted, also carrying the curretage down into the orbit, not far from the optic nerve; and there after long exposure to the solution always used was made. The cornea was not injured, although the curettage, etc., was carried up to its margin. Although too early to say that a cure is effected, the condition looks fairly good. Dr. Mac Kee has seen the case, a short time since, and agrees with me in this, I think. Should recurrence take place the only hope would be the entire removal of the eyeball. The patient was last seen on May 1st, when his condition was perfectly satisfactory.

DISCUSSION.

DR. FORDYCE said he could personally testify to the efficiency of the acid nitrate of mercury, as advised by Dr. Sherwell, in the treatment of superficial epitheliomata. The speaker said he had used it in a number of cases, with excellent results. In one case of a fungating epithelioma of the back, in which the lesion projected an inch above the surface and was almost as large as an adult hand, a most satisfactory result was obtained by the combination of curettage and acid nitrate of mercury, a smooth flexible scar remaining.

Recently, Dr. Fordyce said, he had employed the method in epithelioma of the mouth following leucoplakia, and he had one such case now under observation where he thought it would have a good result. Applications of the acid nitrate of mercury were followed by considerably less pain than was produced by the chloride of zinc or arsenic, and, furthermore, it was more easily controlled.

DR. STELWAGON said he wished to add his indorsement of the method of treatment described by Dr. Sherwell. For the past four or five years, the speaker said, he had preferably treated these superficial epitheliomata by thorough curettage, followed by the application of some caustic and among caustics, he thought the acid nitrate of mercury solution was one of the best, as the wound, if small, required no subsequent dressing as a crust was formed under which healing went on, leaving a practically healthy scar at the end of three or four weeks.

DR. BRONSON said that as a member of the New York Dermatological Society he wished to give voice to the sentiment that had often been expressed there with regard to the remarkable results that had been shown by Dr. Sherwell at various times in cases of epithelioma in which he had followed this method of treatment. It was especially in cases where the orbit was involved that the most remarkable results were obtained.

DR. SHERWELL said he again wished to emphasize his belief in the specific action of the acid nitrate of mercury in the treatment of these lesions, in addition to the curettage for prevention of recurrence, for reasons given in his paper. He had resorted to this method now for thirty-five years, and his faith in the remedy had become stronger as time went on. He had employed it, roughly speaking, in over 1,400 cases, a very large proportion of which were malignant, and had had very few occasions to regret it. Curiously enough, the most unfavorable cases had been, in his experience, those in which the lesion was situated about the centre of the cheek; whether that was due to the peculiar circulation of these parts, or to the adhesions of the skin to the deeper tissues, he did not know; in fact, it was difficult to frame a reason.

PLATE LVI—To Illustrate Article by DR. SAMUEL SHERWELL.



FIG. 2, Case 2.



FIG. 1, Case 1.

PLATE LVII—To Illustrate Article by DR. SAMUEL SHERWELL.



FIG. 4, Case 3.

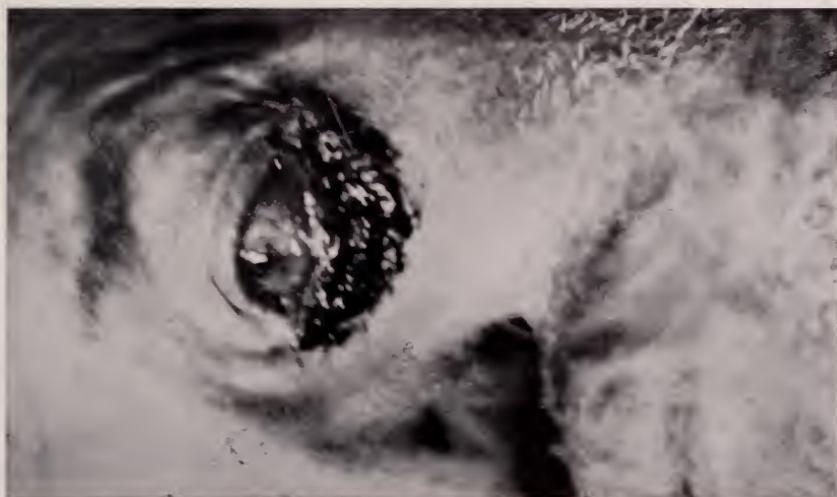


FIG. 3, Case 3.

PLATE LVIII—To Illustrate Article by DR. SAMUEL SHERWELL.



FIG. 6, Case 4.



FIG. 5, Case 4.

PLATE LVIX—To Illustrate Article by DR. SAMUEL SHERWELL.



FIG. 8, Case 6.



FIG. 7, Case 6.

PLATE LX—To Illustrate Article by DR. SAMUEL SHERWELL.



FIG. 10, Case 7.



FIG. 9, Case 7.

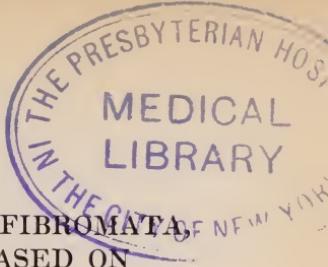
PLATE LXI—To Illustrate Article by DR. SAMUEL SHERWELL.



FIG. 12, Case 8.



FIG. 11, Case 8.



REPORT OF A CASE OF MULTIPLE NEUROFIBROMATA, WITH A REVIEW OF THE SUBJECT, BASED ON 262 CASES REPORTED IN THE LITERATURE.

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CASES of neurofibromata are sufficiently rare, according to the statistics of the American Medical Association, comprising only nine one hundredths per cent of all skin diseases, to be worth recording, and the following case presents several features of interest:

HISTORY. The patient is a male, twenty-five years of age, weighing 134 pounds, is a native of California and single. His father's history is negative; his mother has uterine fibroids; one brother died of diphtheria at the age of four years; one brother is living and presents no abnormalities except a nævus vasculosus on one side of the face and a highly arched, angular palate.

The patient gives a history of pigmented areas present at birth with later development of numerous tumors, but is unable to state exactly when the tumors began to appear. The fontanelles were slow in closing and he was decidedly backward in development, not learning to walk until very late and gives a history and bears evidence of rachitis. He had some intranasal operation to improve breathing and complains of pains over the heart.

PHYSICAL EXAMINATION: He is a fairly well-nourished individual, poorly developed, with prominent sternum and rachitic rosary, and has the appearance and conversation of one of less than average intelligence. The palate is high and angular, and the body hairs and beard are poorly developed. The urine and blood showed no abnormalities. There is no evidence of any nervous affection nor of tumors along the course of the nerves.

The skin of the patient presents between 600 and 700 tumors; bluish-red in color, varying in size from a pinhead to a pigeon's egg and indifferently scattered over the limbs, trunk and face; the palms and soles, and likewise the visible mucous membranes, are free.

Also numerous fawn-colored, pigmented areas, varying in size from a pinhead to the size of the palm, are likewise indifferently distributed, and a condition resembling leucoderma is present on the back of the neck and extends down between the shoulder blades. The only subjective symptom is itching.

This disease is to be differentiated from the neuromata and fibromata—since the tumors are essentially soft fibromata, derived from the connective tissue sheaths of the nerves, and carrying nerve fibres. These tumors may be scattered over any portion of the skin or mucous membranes, or may occur along the course of the nerves.

SYMPTOMATOLOGY. Landowskii¹ divides the symptoms into:

(A) Essential physical symptoms.

1. Cutaneous tumors.
2. Cutaneous pigment.
3. Tumors of the nerves:

which might, in turn, be subdivided into single tumors, plexiform tumors, elephantiasis fibrosum congenita and secondary malignant neuroma (Garré²);

and to which might { 4. Nævi (angiomatous—pigmented—piliferous).
be added: { 5. Bone lesions;

and (B) Functional symptoms of secondary importance, as painful cramps, vague disturbances of sensibility and progressive decadence of intelligence, probably better characterized as deficient mentality.

A (1) THE TUMORS OF THE SKIN are of varying size and shape and are distinguished from fibromata by their softness, transparent tissue and mobility and occur in 50 per cent. of the reported cases.

They are usually sessile and have the feel of a seedless raisin; the distribution is usually irregular; it may follow the course of a given nerve or plexus (Duhring³), or the lesions may be more numerous where the clothing presses on the skin, or occur on the mucous membrane (Cook⁴, Rimann⁵, Benaky⁶).

The skin covering the younger tumors is yellowish, bearing out the theory of Soldan¹⁰ and Weber¹², that the tumors arise from a pigmented area, while the covering of the older tumors is blueish-red in color, thin and wrinkled and often contains comedones.

Inflammation, suppuration or absorption of the tumors rarely occur, although Gallant and Smith⁷ report ulceration in one case,

but this was undoubtedly due to the size of the tumor and the resulting tension on the skin.

A (2) THE PIGMENTATION (36 per cent. of the cases—A. Thomson⁸ 25 per cent.) is usually present at birth and the smaller lesions, arranged singly or in groups, are practically identical with lentilles but in contradistinction to them, are on the covered surface of the body and occasionally on the mucous membrane (Rimann⁵).

The larger plaques, of varying size and oval shape, are lighter in color than the smaller lesions *i. e.*, light fawn, display a symmetrical tendency and often follow the lines of cleavage of the skin and, in addition to this, a general bronzing of the skin has been observed (Merk⁹).

Soldan¹⁰, whose investigations were verified by Goldman¹¹ demonstrated the thickened nerve fibres entering the pigmented areas and believes that the pigmented area is the predecessor of the skin tumor, and the cases of Rose Bradford⁵¹, Gilchrist⁵² and Little⁵³ seem to bear out this theory. Thibièrege⁴² considers pigmentation, together with general symptoms, sufficient for a diagnosis.

A (3) TUMORS OF THE NERVES may be visible or palpable or found only at autopsy, the single tumors occurring as fusiform swellings lying in the long axis of the nerves (present in 30 3-13 per cent. of the cases), or they may form an interlacing plexus involving a group of nerves, *i. e.*, plexiform neuroma (32 9-13 per cent.), or they may develop into elephantiasis fibrosum congenita (as distinguished from elephantiasis of the filaria or streptogenes type). Bruns¹² claims that one or the other form may occur in succeeding generations, while Miege¹⁴ cites 8 cases of elephantiasis congenita occurring in four generations of one family and Nonne¹⁵ reports 9 congenital cases affecting both limbs, all in the same family, of whom 9 members had cutaneous tumors. The tumors occurring on the nerves may involve cerebral, spinal or sympathetic nerves (von Bugner²⁶, Sorgo²⁷, Abbe²⁸) or even the dura mater may be involved (Westphalen²⁹) and internal and external tumors frequently exist in the same individual (von Recklinghausen,³⁰ Case I, Landowski,³¹ Case I, Saville,³² Deloré and Bonne³³).

It is not uncommon for malignancy, usually taking the form of a spindle cell sarcoma, to appear in the nerve tumors, particularly after operative procedure (Kampman¹⁶), Garré² reporting 12 per cent., Littlewood¹⁷, 17 per cent., Adrian¹⁸, 11.8 per cent., Thomson⁸, 17 per cent., present series 10 per cent.

Garré claims that this sarcoma, occurring on the base of a neurofibromatous tumor, differs from the ordinary sarcoma on the following grounds: It occurs on the base of a long-standing tumor, possibly since infancy, which tumors, after remaining long quiescent, develop rapidly but remain encapsulated. The metastases are usually regional, and internal metastases, if they occur, are later in evidence.

Finotti¹⁹ and Scheven²⁰ claim this distinction is impossible, but Littlewood¹⁷ has been able to demonstrate by specimens, the gradual transition from neurofibromatous tissue into spindle cell sarcoma.

Nævi, of either the angiomatous, pigmented or piliferous variety, occurred in 4 per cent. of the cases. Various changes in the appendages of the skin have been noted—onychogryphosis and onychoklasie, together with poorly developed body hairs and beard and occasionally alopecia areata.

BONE LESIONS. Various deformities of the bony structure have been noted (9 1-13 per cent), and Virchow²¹ believed that since these lesions occur frequently in conjunction with fibromatosis of the soft parts, they were parts of the same process and he named this condition of hyperostosis "leontiasis ossea," the best example of which was the so-called "iron man" (*Brit. Med. Jour.* Vol. 1, 1894).

Deviations of the spine are often present (H. A. Anthony,²² Audry,²³ Leredde,²⁴ Jeanselme²⁵), Adrian noting 7 per cent. of all cases, while Preble and Hectoen³⁴ report a case of multiple neurofibromata of the skin accompanied by multiple tumors of the cranial and sympathetic nerves and plexiform neurofibromata accompanied by symmetrical arthritis deformans with ankylosis, and also a kyphoscoliosis. They believe the joint changes to be due to nervous influence.

Berggrün³⁵ reports a case of neurofibroma where both hips and knees were strongly flexed and the right tibia and femur thickened.

Dessauer³⁶ reports defects in the skull, Bruns various exostoses thereof, thickening of the crests of the ilium (Kolpin³⁷), elephantiasis congenita of the hand, where a radiograph showed the bones longer and thinner than usual (Perthes³⁸), exostosis of frontal and temporal bones (Beach-Cooper-Hutchinson³⁹). Bones of skull and ribs softer than normal (Hoissard⁴⁰)—exostoses of upper extremi-

ties and feet (Soldan), and high-arched palate is frequently reported (Zumbush⁴¹—Thibierge⁴²).

(B) FUNCTIONAL SYMPTOMS. Occasionally no functional symptoms are present, but in a large number of the reported cases we find a diminished sense of pain over the cutaneous tumors, various neuralgias, which are increased upon pressure over the affected nerve, while in special cases various nervous lesions may be found.

Itching is reported by Morris⁴³, Philippson⁴⁴, Atkinson⁴⁵, and in the present case.

Mental symptoms characterized by a vacillation of moral and mental powers are frequently present (9 8-13 per cent.) and often progressive, Oppenheim⁴⁹ claiming a distinct relationship to idiocy while von Recklinghausen describes the condition as "Disturbances of the nervous sphere, which indicate a functional abnormality of the brain, as evidenced by diminished intellect, cretinism, etc."

AETIOLOGY. Sex has no influence in this affection and the period of onset is undetermined, whether intrauterine, in infancy or later, but it is extremely probable that it is a disease of the nervous system dating from intrauterine life.

Feindel⁵⁰ and Oppenheim have elaborated a theory that it is due to some congenital disturbance of the tissues of the ectoderm during embryonal development and, if the disturbance is marked, the lesions occur at birth, whereas, if the alterations are of a less severe character, there are no visible alterations at birth but the lesions appear later.

Merk, Adrian, Chauffard⁵⁴, and Revelloid⁵⁵ report enlarged adrenals at autopsy and Merk believes that the pigmentation might be due to this cause, as in Addison's disease. While this might have some bearing on the general bronzing of the skin occasionally reported (Benaky⁵⁶, Leredde and Bertheraud⁵⁷, Thibierge⁴²), it is more than probable that the localized pigmentation, at least, is explained by the theory of Soldan.

Bruns and Goldmann believe the condition is a form of giantism or elephantiasis of the connective tissue elements of the peripheral nervous system. Von Recklinghausen and Etienne have suggested the theory that the linear naevi, which show such relationship to the peripheral nerves, are due to an intrauterine neuritis or myelitis, which so lessens the control of the skin that certain elements hypertrophy, and since this condition is not infrequently found in conjunction with neurofibromata and since the skin lesions of the latter disease often apparently follow the course of the various nerves,

that the two diseases have a similar origin. Anderson⁵⁹ and Jamieson⁶⁰ note cases occurring in conjunction with adenoma sebaceum. Campana⁶¹ cites a case where the lesions appeared after the disappearance of a syphilide and various cases have been reported as appearing after pregnancy (Meek⁶²), or after operation (Preble and Hectoen), or severe illness—and in these cases it is possible that the condition lay dormant, or the pigment unnoticed until some profound disturbance caused the appearance of further development of the lesions.

Brickner⁶³ reports a case of soft fibromata occurring during pregnancy but disappearing within a few months, but as no nerve fibres were found in the tumors and no other lesions were present, it was probably not a true neurofibromatosis.

Three predisposing elements enter into the aetiology:

- (1) Congenital element.
- (2) Hereditary element.
- (3) Family element.

The first is practically constant and although the statistics show only 40 per cent., it is probable that this element is much higher, but the early lesions are overlooked; the second shows 14 per cent., some histories extending back three and four generations, while the third is occasionally present.

MICROSCOPIC EXAMINATION. Sections of the skin tumors show a sharply defined growth, since the connective tissue is entirely different from that of the cutis—the coil glands are pressed outward or upward by the tumor or unrolled—the hair follicles are constricted or pushed aside and the lobules of the sebaceous glands are separated.

The blood vessels and lymph vessels are dilated.

The epidermis is unaffected and the only effect on the papillary layer is a stretching upward, displacement and thinning, the entire picture demonstrating that the tumor originates in the stratum reticulaire or subcutaneous connective tissue.

The tumor itself is a hyaline, spongy, ill-defined, imperfectly developed connective tissue—varying from a gelatinous mass with wavy fibres, in small tumors, to fairly coarse fibrous tissue with finer fibres. In the interstices, in the larger tumors, the centre of which often remains gelatinous.

Connective tissue cells, round and spindle shaped, containing large and prominent oval nuclei are present, particularly in the gelatinous portion of the tumor. These often form an interlacing

network, not unlike a glioma (Weiss⁶⁵). The only elastic fibres present are those in the connective tissue binding the different portions of the tumor together.

Unna⁶⁴ describes a peculiar form of mast cell which occurs in connection with the ordinary mast cells and is peculiar to this tumor. Where the ordinary mast cell shows, with a polychrome methylene blue stain, a blue nucleus surrounded by a red granular area, this peculiar type has a red halo surrounding the granular area, practically doubling the size of the cell. This halo he describes as a spongioplasm peculiar to the mast cells, which stains like the granules.

The nerve fibres are often found running parallel to the dilated blood vessels, but do not run parallel with one another, often crossing and recrossing and often apparently spiral, and may frequently be traced as far as the epidermis.

The question as to whether the nerve fibres participate in the process or remain passive has been one of the most disputed points of the histopathology, but the general consensus of opinion (Goldman, von Recklinghausen, Keen and Spiller,⁶⁶ and Kriege⁶⁷) favors the theory that, with the exception of those cases where sarcomatous degeneration takes place, the only alteration in the nerve fibre itself is a stretching or flattening thereof.

The tumor apparently originates in the endoneurium of the nerve, later involving the epineurium and perineurium, although Herczel,⁶⁸ Philippson,⁴⁴ and Lehmann⁶⁹ believed it originated from the sebaceous glands and hair follicles, but this theory is negatived by Strube's⁷⁰ case and Gilchrist's Case I, where the tumors occurred on the palms and soles—and the fibrous thickening of the hair sheath, sebaceous glands and adventitia of the vessels is really due to an extension of the fibromatous process, affecting those organs.

PROGNOSIS. The prognosis should always be guarded; while the patient may live his allotted time with absolutely no inconvenience, the possibility of malignancy and symptoms due to pressure of internal tumors must be thought of; in fact, Launois and Variot⁷¹ divide the disease into three periods (1) pigment, (2) tumor formation, (3) malignancy.

TREATMENT. In a disease, where the causative factor is unknown, we have nothing on which to base treatment and we are relegated to the use of such prophylactics or palliative measures as the case demands. That is to say, the prevention of any irritation of the skin or injury thereof, infection, systemic intoxication, or

in fact anything that might tend to accelerate the growth of the tumors, and in addition, the surgical removal of such tumors as are objectionable on account of size or cosmetic conditions, and relief of itching with X-rays. Whiteside⁷² reports a case cured by the administration of arsenic and Graham Little⁷³ and E. P. Weber⁷⁴ report one treated with fibrolysin without result, but Fenton⁷⁵ claims marked improvement after injection of fibrolysin every third day for two weeks, followed by once a week for two months.

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- ³ DUHRING.
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- ⁵ RIMANN.
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- ⁹ MERK.
- ¹⁰ SOLDAN.
- ¹¹ GOLDMANN.
- ¹² WEBER.
- ¹³ BRUNS.
- ¹⁴ MIEGE.
- ¹⁵ NONNE.
- ¹⁶ KAMPMAN.
- ¹⁷ LITTLEWOOD.
- ¹⁸ ADRIAN.
- ¹⁹ FINOTTI.
- ²⁰ SCHEVEN.
- ²¹ VIRCHOW.
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- ²³ AUDRY.
- ²⁴ LEREDDE.
- ²⁵ JEANSELME.
- ²⁶ VON BUGNER.
- ²⁷ SORGO.
- ²⁸ ABBE.
- ²⁹ WESTPHALEN.
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- ³¹ CROCKER.
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PLATE LXII—To Illustrate Article by Dr. D. FRIEDLANDER.



FIG. 2.



FIG. 1.

- 37 KOLPIN.
 38 FERTHES UND BEACH.
 39 COOPER, HUTCHINSON.
 40 HOISNARD.
 41 ZUMBUSH.
 42 THIBIÈRGE.
 43 MORRIS, MALCOLM.
 44 PHILIPPSON.
 45 ATKINSON.
 49 OPPENHEIM.
 50 FEINDEL.
 51 BRADFORD, ROSE.
 52 GILCHRIST.
 53 LITTLE.
 54 CHAUFFARD.
 55 REVELLOID.
 56 BENAKY.
 57 LEREDDE et BERTHERAUD.
 58 ETIENNE.
 59 ANDERSON.
 60 JAMIESON.
 61 CAMPANA.
 62 MEEK.
 63 BRICKNER.
 64 UNNA.
 65 WEISS.
 66 KEEN and SPILLER.
 67 KRIEGE.
 68 HERCZEL.
 69 LEHMANN.
 70 STRUBE.
 71 LAUNOIS et VARIOT.
 72 WHITESIDE.
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TWO CASES OF MYCOSIS FUNGOIDES.

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THE nature and pathogenesis of mycosis fungoides is still obscure. In spite of the efforts of many investigators to solve the problem by extensive clinical study and exhaustive work on pathological lines, we are to-day as ignorant of the cause of Alibert's disease as perhaps the describer himself was (1814). It is true that, while bacteriological methods have failed to yield any results, the newer methods in haematology and microscopical anatomy have contributed a great deal toward a better conception of this disease, but in widening the scope they have also made the subject more complicated. The difficulty becomes still greater if we take away from mycosis the possibility of its being a disease *sui generis*; for then we are at a loss for a proper place for it in our classification of diseases.

From a review of the latest literature it is apparent how widely the opinions of the various authors still vary on this point and that the four theories as condensed by Wolters (1) mycosis is to be classed with sarcoma; (2) with lymphadénie cutanée; (3) with the granulomata; (4) with the infectious dermatoses, are still prevalent, though with variations.

In an article by von Zumbusch, with a report of five cases, all the literature is reviewed from Wolters' famous monograph (1899) to the year 1905. Since then, besides the ten cases reported by Herxheimer and Hübner, who do not seem to enter into any discussion concerning the aetiology of the affection (speaking only of "mycosis cells" in their histological reports), comparatively few cases have been recorded. Nevertheless, from the speculations of the different writers it is evident what uncertainty there still exists with regard to the nature of mycosis fungoides.

Thus Brandweiner, whose case came to autopsy and showed some nodular masses from the size of a hazel nut to that of a small apple distributed in the brain substance, considers it as mycosis metastasis from the skin along the course of blood vessels, thereby proving a haematogenous origin. Histologically, the brain tumors showed the same structure as those of the skin with infiltration around the blood vessels, but no reticulum, from which he

argues that the reticulum in the skin can only be the result of a separation of the preexisting connective tissue fibres of the corium. The author further maintains that there is no ground for the theory that mycosis is a cutaneous metastasis of leukæmia and that there exists no relation between the two.

Hallopeau, in two different reports, demonstrates the striking clinical similarity of each of his cases to certain syphilides, and on that ground suggests a parasitic origin.

Pasini reports the case of a seventy-eight-year-old man, who, along with the typical skin lesions, showed enlargement of the spleen and lymph glands and considerable leucocytosis, histologically resembling the cases of Pelagatti. He therefore holds, with that author, that it has something to do with a myelogenous origin, and concludes that mycosis is a general disturbance with skin manifestations originating probably in the blood-forming system.

Bushnell and Williams, reporting a case with autopsy, sum up the pros and cons of mycosis in relation to infectious granuloma and sarcoma. They bring out some interesting points, but do not venture an explanation of the pathogenesis of the disease under consideration.

The diversity of opinion that still exists about mycosis fungoides appears to be largely due to the fact that it is a comparatively rare disease and that no single observer could have seen very many cases, and our facts have to be gathered from widely scattered sources. Every case, therefore, should be given as much publicity as possible.

It is with this object in view that the following two cases are offered for publication, especially as they both offer some very interesting features to which reference will be made later.

CASE I.

George H., sixty-seven years of age, a city official, was admitted on March 31, 1909.

ANAMNESIS: The patient has always been well, or at least has never been seriously ill. His present skin affection dates back ten years. At first there appeared on the hairy scalp a half-dollar-sized lesion, which, in the course of a week, grew as large as the palm of the hand. This lesion was of a deep-red color, somewhat raised, of a soft, doughy consistency and largely covered with crusts. With the exception of a very slight itchy feeling, it gave

the patient no annoyance. A few weeks later, after continued application of ichthyl salve, the process completely subsided without leaving any marks behind. Even the hairs, which fell out as a result of the affection, were now fully restored. In 1901, a few dry, scaly places presented themselves on the left arm and on both legs. These persisted for a few months and then disappeared.

After an interval of about a year, the symptoms manifested themselves anew; large areas of the size of a silver dollar, covered with scabs and very itchy, appeared on various parts of the skin, but mainly on the right calf and left thigh. These, too, healed up without any medical assistance.

In the beginning of 1907 there developed, at first on the right flank and in the left axilla, but very soon afterward on the left thigh, some dark-red, sharply defined, elevated areas, which, at times, would become purulent. A few months thereafter new lesions were added, localizing themselves chiefly on the inner side of the left forearm just below the elbow joint and on the external surface of the right thigh. In the axilla, one elevation amounted to a considerable bulging, so that at one time it had reached the size of a small apple. This condition lasted until the beginning of 1908, when the patient commenced to receive X-ray treatment and when, after five sittings, the already excoriated growths healed up, and the entire affection materially improved. However, an exacerbation, which the patient attributes to the arsenic he had been taking for some time, soon set in and by September of the same year, not only were the lesions previously successfully treated by the X-ray again opened, but new foci of the above described character sprung up on the trunk, especially in the vicinity of the right shoulder joint, and by November, 1908, the disease had almost reached its present dimensions. From that time until he was admitted to the hospital the patient treated himself with boric acid ointment.

STATUS PRÆSENS: A number of scaly, somewhat reddened spots, ranging in size from a lentil to a twenty-five cent piece are to be seen on the forehead, right ear, in the external auditory meatus, and both front and back aspects of the neck. The trunk, especially the right side of the thorax as well as the abdomen, the left shoulder and hip regions present extensive lesions. One on the left shoulder is ellipsoid and reaches the size of a palm of a man's hand. This one closely resembles another situated near the umbilicus; and a similar one is to be found on the front of the chest, while the entire right side of the thorax appears like a map from

the coalescence of many such patches. From the left hip a stretch of diseased surface can be followed anteriorly on the abdomen to about four fingers' breadths from the median line. All these lesions are sharply defined, intensely reddened, evenly raised above the level of the skin, covered with scabs and crusts, and are hard to the touch. Within the reddened surface on the left hip, one notices a few single, flat elevations of a dark-blue color and soft consistency, which show crater-like ulcers in the centre. On the right side of the trunk the irregular patch shows similar flatly elevated growths with mound-like ulcers and the area about the umbilicus likewise contains these elevations.

Furthermore, on the abdomen, chest, left shoulder, and in the region of the mons pubis, pale-red foci, from a cent to a half dollar in size, can be observed. These are sharply defined, irregularly circular and show some exfoliation. A very large patch can be noticed about the region of the left elbow; it extends from the middle of the arm to about the middle of the forearm and shows a serpiginous margin of an uncommonly sharp outline and is intensely dark in color; its surface is covered with scales and scabs, on removal of which a very fine epidermis and many little erosions are revealed. At the centre of the elbow there seems to spring from the surrounding reddened skin several rounded, sessile tumors which are partly covered with skin and partly eroded; these are of a soft consistency and range in size from a pigeon's to a hen's egg. The dorsum of the left hand and wrist further show smaller lesions of the above description and still more and larger ones (dollar sized) are to be found on the right hand; the latter seem paler and exfoliate easily. Similar and still larger ones are on both lower extremities, where there exists a diffuse desquamation and many scratch marks; the same can be said of the popliteal space and left thigh. The genital organs are reddened, covered with crusts and swollen.

Further examination reveals a fair-sized enlargement of glands in both axillæ and some hard pigeons' egg-sized glands can be felt in the inguinal regions. The nuchal glands are palpable; the crural glands are negative.

Internal examination was negative, except for the signs of a diffuse bronchitis. The urine was negative. The temperature, pulse, and respiration were normal. A blood examination showed the red corpuscles to be nearly 4,000,000; haemoglobin, 75%; leucocytes, 9,500. The differential count gave the following result:

Mononuclear; small, 12%; large, 17%; transitionals, 2%; polymorphonuclear neutrophiles, 68½%; eosinophiles, ½%; mast cells, none.

Before treatment was instituted, a piece of skin was excised from one of the flat infiltrations for histological purposes.

The unimportant features of the treatment and further course of this case will, as far as possible, be omitted.

The main therapeutic measure resorted to was the Röentgen treatment, besides which many indifferent ointments were used for purposes of soothing and protecting, and where it concerned an open ulcerated or purulent surface the treatment was correspondingly antiseptic in the shape of solutions or ointments. Several elevated lesions in the neighborhood of the left elbow which gave a great deal of annoyance were removed surgically. ,

The X-ray treatment was begun a few days after admittance and continued daily as long as the patient's condition did not contraindicate it; fifteen-minute exposures were applied successively on small areas, the surrounding surface being protected by a lead shield. But the temperature of the patient would rise so often, both as a result of the Röentgen reaction and from the ulceration and pus formation in the tumors, that the treatment had to be discontinued for very long intervals.

The course of the disease, notwithstanding the involution of a few tumors after the X-ray exposures, was progressively worse. Thus the beginning of May finds his bronchitis very much aggravated and many of the tumors ulcerating or sloughing away, discharging a foetid greenish-yellow pus. A blood examination at that time showed a severe grade of anaemia with leucocytosis of 27,000, consisting mainly of polymorphnuclear neutrophiles, very probably a result of the purulent condition of the tumors. Toward the end of May, the patient became very cachetic. He complained of sleeplessness and weakness, as well as of complete anorexia; the temperature was subnormal. He rallied a little in the first part of June, but soon relapsed into his previous condition. Severe pains in the region of the stomach were now added, vomiting became a prominent symptom, the heart became gradually weaker and death finally occurring on June 18th.

AUTOPSY: Medium-sized, pretty strongly built body, extremely emaciated. General integument of face, right arm, healthy parts of the anterior surface of the thorax, left arm and lower extremities, show very pale, livid, death spots coalescing over the

back. On the left infraclavicular region and extending to the arm, there is an area, 10 x 12 cm., which is very atrophic, glistening, and sharply circumscribed by a margin consisting of semi-circles; in places the margin is covered with crusts. The left elbow shows, anteriorly, an atrophic yellowish-red skin area which contains some cord-like scars. The ulnar side of the elbow presents, at its junction with the forearm, two small coin-sized, coalescing granulation tissue-like elevations, showing a loss of substance, 3 x 2 cm., with raised, wall-like reddened borders and grayish bases. The latter were divided by bridge-like bands running across their centres. In the entire vicinity down to the wrist joint, the epidermis is wanting and a pale-yellowish, dry rete is brought to view. On the left lumbar-kidney region, an irregularly round surface is to be found with the following changes: Upper anterior part sunken, pale red, atrophic, in parts small coin-sized excoriations; posteriorly a crater-like, broken-down ulcer, 6 x 2 cm., with wall-like margin and surrounded by an infiltrated area. This part is sharply limited from the surrounding skin by arch-like borders. In the neighborhood of the anterior superior spine of the ilium on a palm-sized area, the skin is white, glistening, and contains numerous pigmented spots; at the junction of this area with the healthy skin the pigment is particularly well marked and is covered with many cicatrices with pigmented borders. On the external surface of the left thigh there is a reddish surface with denuded epidermis, which is covered with numerous intensely reddened, superficial excoriations. Posteriorly, several brownish, somewhat livid scab-carrying spots are present. The right side of the thorax appears diseased from the infraclavicular and axillary regions, beginning behind the axillary line and reaching to the parasternal line, over the arch of the ribs, down to four fingers' breadths above the spine of the ilium. Here numerous round, quarter- to dollar-sized, superficial yellowish-red, somewhat excoriated, flat nodules, can be seen, particularly in the axilla and over the edge of the pectoralis major. They are practically clean ulcers, with glistening, red bases, coalescing here and there to form roundish patches. In the neighborhood of the arch of the ribs, laterally, a circular ulcer, 3½ x 4 cm., with wall-like margin and grayish-black deposit on the base, is noted. The neighboring skin is the seat of small scars and pigmented areas, which join diffusely with the healthy parts. On the upper part of the right arm there is a palm-sized area, including a smaller oval patch, in which the skin is depressed, the outer limits

consisting of brown pigmented spots. The inner surface of the right leg, from the knee joint down, contains several bowl-like losses of substance with sharp, highly infiltrated, wall-like margins and infiltrated bases, $3 \times 1\frac{1}{2}$ cm., some of which can be seen breaking into the joint cavity attacking the calf and exposing fascia and muscle.

SUBCUTANEOUS CONNECTIVE TISSUE contains very little fat.

MUSCULATURE is brownish-red. The tumor-like infiltration in the right axilla, and the larger broken-down tumor on the right lateral abdominal region, show corresponding infiltrations in the subcutis; deeper layers of the cutis seem free.

THYROID. The right lobe is enlarged and reaches to the manubrium sterni and is the seat of pigeon's-egg-sized nodules consisting of partly calcified and partly hyaline substance. The left lobe contains several bean-shaped nodules of similar character. The interstitial tissue is pale brown and atrophic.

TRACHEA. Several rings are calcified and there is a somewhat narrowed lumen.

LEFT LUNG. Free, very pale, somewhat denuded anterior parts, while the pleura on the posterior part of the lower lobe is cloudy, corresponding to an intensely reddened and resistant background, surrounded by a zone of ecchymosis. On palpation a single sharp nodule is appreciable and one recognizes now in the pleura a number of partly circular, pale-red, somewhat prominent, cone-shaped nodules, that show a depressed centre and are situated with their apices directed inward. They consist of a grayish-red moist tissue, becoming quite gray and softened in the centre. The majority of the nodules are located, as described, in the pleura; but within the lung tissue there exists a number of smaller (cherry-pit to cherry-sized) nodules; these are round and not very sharply circumscribed and are distinguishable from the neighboring tissue by their harder consistency. The smaller ones are reddish-brown with a grayish centre, while larger ones appear dark red in the periphery and grayish-brown and dry in the centre, where also some included branches of vessels and bronchi are to be recognized. On the upper lobe, toward the hilus, another nodule is noticeable; this is about a pigeon's egg in size and is similarly composed of a reddish granular tissue which is so broken down in the centre that it has left a cavity containing a ball of mucus and detritus of the size of a hazel nut, on removal of which a smooth wall is revealed. This growth is situated very close to a large

branch of the pulmonary artery, the latter being thrombosed. Throughout the lung, as already mentioned, there is a large number of variously sized, and when lodged in the tissue, minute nodules, which are roundish, tough, elastic, grayish-red, somewhat granular, with sharp, grayish-yellow, almost translucent central zones, giving them a hyaline character. In the lower lobe such nodules are particularly numerous. Another pigeon's-egg-sized tumor is located centrally and contains a bean-sized, softening cavity. Peripheral to this node and corresponding to the reddened area on the pleura at first noticed, the lung tissue is airless for quite a distance and appears dark red, surrounded by lighter, grayish-red, not very sharply defined smaller nodules, fused together in columns. Toward the base of the lobe a nut-sized, tough, elastic, peripherally dark-red, and centrally grayish-red node is present. The venous branches crossing it are free. The lung substance between the well-defined nodular infiltrations is œdematosus, hyperæmic and but little pigmented.

RIGHT LUNG. Equally free, large, white or pale red and only here and there a few dark pigmented places. Externally, on the upper lobe, a few single, rather flat, thyroidiform, elevated areas, appear on the surface, the largest ones of which can be felt deep in the tissue as walnut-sized tumors with softened centres. On the lower lobe, below and externally where the pleura appears cloudy, dark red and ecchymosed, the lung tissue feels thicker and the surface presents a number of roundish, partly coalescing, flatly raised foci with gray centres and reddened peripheries. On section the greater part of the posterior portion of the lung, from the periphery to the hilus, is airless and incloses a focus where the tissue is partly light and partly dark red, infiltrated and separated from the peripheral tumor-like structure; it is brownish-yellow in the centre, dry and friable or softened in places. Toward the apex of the lowe lobe, there appears a number of variously sized coalescing tumor-like infiltrations of similar character. These are equally grayish-red, somewhat granular, and do not emit any juice; and depending upon the size there is a larger or smaller necrotic mass in each of them. The surrounding tissue is here highly œdematosus and contains little air, but, in spite of this, the tumor-like structures are conspicuous on account of their intensely red coloration. In no place is it possible to scrape off any distinct juice, except, perhaps, here and there a little cloudy fluid.

The mucous membrane of the bronchi is intensely reddened and

contains a purulent secretion, but no infiltration anywhere. The mediastinal surface of the upper lobe presents a disc-shaped node, $2\frac{1}{2}$ cm. in size, yellowish-red centrally, and somewhat softer, grayish-red in the periphery. Corresponding to this, on the mediastinal pleura, there is another $2\frac{1}{2}$ cm. flat, disc-like infiltration of exactly the same character; adjoining this a smaller and softer, more reddened one and posteriorly still another lentil-sized disc-shaped one. *All these have an extraordinary similarity to the infiltrations in the skin as well as to those in the lung, through their grayish-red or intense coloration and their tendency to break down in the centre, which particularly remind one of the crater or bowl-like ulcers described above.*

PERICARDIUM, contains clear serum.

HEART. Remarkably large. Right ventricle, grayish-yellow clots fastened to the trabeculae. Mitral valve, thin, thickened at base and whitish. Intima of aorta, normal. On the anterior surface of the left ventricle there is a scar-like, sunken brownly pigmented area of lentil size; above this there is a cleft between two subepithelial fat-ridges, at the bottom of which the epicardium is grown together with the muscle. On the posterior surface of the left ventricle, there is a half lentil-sized, dark-brown nodule on a fat-free spot of the serosa.

RIGHT BRONCHIAL GLANDS. Enlarged, marrow-like appearance, strongly pigmented centrally, with a peripheral white border.

LEFT BRONCHIAL GLANDS, pigmented black, and broken up by a granular focus.

ABDOMINAL VISCERA. Position normal.

LIVER. Somewhat smaller than normal. It presents a smooth surface and a translucent capsule. The tissue was brownish-yellow with nutmeg-like markings. Excepting two sharp millet-seed-sized nodules on the under surface of the right lobe beneath the capsule, there were no deposits.

SPLEEN. $11 \times 9 \times 3\frac{1}{2}$ cm; very fine capsule. The tissue is rather soft and yet of irregular consistency, in so far as a few more darkly colored areas feel a little more resistant. These surround lighter areas, which are more fragile and soft and corresponding to which the cut section shows sunken areas. The trabeculae are strengthened; the Malpighian bodies are not distinctly visible.

KIDNEYS. Surrounded by an abundance of fat, capsule somewhat adherent, and the surface smooth. The cortex presents the usual width, is pale red, with a yellowish tone, and the markings

pretty distinct. In places there are indistinct cone-shaped foci, reaching down to the pyramids, having a grayish color and somewhat depressed. The mucous membrane of the pelvis and calices is pale.

BLADDER. Clear urine; mucous membrane is pale red.

PROSTATE. Somewhat enlarged, bean-shaped third lobe.

SUPRARENAL GLANDS. Fairly tough, especially the left one, which contains in the cortex several roundish-yellow, fatty, miliary nodules.

ŒSOPHAGUS, PHARYNX AND LARYNX. The mucous membranes are very pale.

STOMACH. The mucous membrane at the cardia is pale red. At the continuation with the pyloric part, there is a rather large loss of substance, reaching to the muscularis, with wall-like, infiltrated, whitish-red margins. All the rest of the mucous membrane is covered, partly with a number of smooth ulcers, varying in size from a cent to a twenty-five-cent piece, with wall-like, whitish-red, infiltrated margins, as above, and partly with node-like, white or whitish-red infiltrations with smooth surfaces, some of which ascend the folds and reach within the cardia. Here, too, the similarity to the skin affection is very striking considering the color and the limitation of the process to the mucous membrane.

DUODENUM. The mucous membrane is pigmented grayish-red.

GALL BLADDER. Contains thinnish, yellow-brown bile.

SMALL INTESTINE. Thick bile-stained chyle.

LARGE INTESTINE. Partly contracted and contains a thick, pulpy, faecal material. The mucous membrane is pale and brownish; nowhere are scars or other changes to be observed.

LYMPH GLANDS. Under Poupart's ligament the lymph glands are considerably enlarged on both sides, much tougher than usual and intimately grown together with surrounding cellular tissue; they are brownish-red and in places show haemorrhagic pigmentation. The retroperitoneal glands are little enlarged but equally hard and regularly reddened. The right axillary glands are very considerably increased in size, grown together with surrounding cellular tissue and on section are partly granular, softened, purulent or necrotised, but peripherally they are very succulent, pulpy and grayish-red.

PENIS. The skin, below and to the left, is regularly reddened, thin and glistening; the prepuce is adherent. Between the scrotum and the thigh, on the left, are several coalescing, flat, superficial,

excoriated, roundish infiltrations, alternating with depressed scar-like pigmented areas. To the right the skin is more atrophic and the epidermis is macerated. On the perineum, a flat, penny-sized, excoriated nodule is noted.

BONE MARROW. In the upper half of the right thigh the bone marrow is red, with sharply defined, more resistant, yellowish nests of the fat marrow.

BRAIN. The coverings are pale; the cranial vault is thick, compact and heavy; the dura is pretty strongly grown in. The pia-arachnoid is very cloudy on the convolutions, thickened and oedematous, so that along the mesial edges the meninges are not translucent. The basal meninges are very delicate, and the vessels are somewhat stiff. The brain substance is very anaemic. The ventricles are somewhat wider. The basal ganglia are pale brown. The pons and medulla are equally pale. There are no focal changes.

HISTOLOGICAL EXAMINATION OF, FIRST, THE PIECE OF SKIN EXCISED DURING LIFE (FLAT INFILTRATION). The epidermis shows a slight degree of hypertrophy. The papillary body is increased in size and contains irregularly distributed nests of cells which resemble lymphocytes, *i. e.*, large deeply staining nuclei, with a very narrow rim of protoplasm around them; as a rule, they are larger than the ordinary round cells seen in the so-called round cell infiltrations. These cells are arranged largely around blood vessels, which seem rather numerous, and in dilated lymph spaces, as well as around glandular structures. A few of these elements are also found scattered in the rete. In places, several smaller accumulations of these cells coalesce to form larger, thickly infiltrated areas where a fine connective tissue reticulum can be discerned by the Van Giesen stain. Elastic fibres in this part of the corium are almost entirely absent. The deeper parts of the corium are similarly affected, but to a much lesser degree. Beside the cellular elements mentioned above, there is a diffuse scattering of a rather large number of plasma cells. Mast cells are very scarce and there are no giant cells.

SECOND. A PIECE OF SKIN EXCISED POST-MORTEM (FLAT INFILTRATION, VERY ELEVATED, APPROACHING TUMOR). Here the changes in the corium are enormous. The entire structure is replaced by a dense infiltration of the above-described elements, giving it the appearance of a lympho-sarcoma and here, too, that fine reticulum can be made out. As regards the epidermis, this section seems to have struck it in a peculiar condition. The

greatest part of it is missing, and what is left lies flat on the corium and appears like a pseudo-membrane consisting of a net work enclosing epidermic cells in a state of hydropic degeneration, coagulated serum, leucocytes and a number of infiltration cells.

THIRD. SECTIONS FROM THE INTERNAL ORGANS. A non-eroded infiltration of the gastric mucosa presents the same picture as the corium of the last-described skin specimen. The superficial epithelial structure is intact, but from the stratum proprium down to the muscular coat, the mucous membrane is thickly filled with the infiltrating elements. Breaking through the muscularis mucosa and going outward, the infiltration gradually diminishes and disappears at the muscularis. In a nodule from the lung, the cells are so crowded together that the lung structure is not recognizable. Toward the periphery of the infiltration the alveoli become apparent and are seen to be filled partly with the same lymphocyte-like cells and partly with red blood corpuscles. A section of the spleen shows that it is but slightly affected in the process. The pulp seems a little thicker, but the Malpighian bodies are quite prominent. Some small and large haemorrhages and pigmented areas are also to be found. A specimen of a lymph gland shows considerable increase in the lymphoid cellular elements in the follicles and dilatation of blood vessels. As a general rule it may be said that the infiltrations are nowhere sharply defined but shade off gradually into surrounding tissue, and it may be added that the picture is fairly uniform in all the organs including the skin.

CASE II

Henrietta B., fifty-six years of age, housewife, admitted March 1, 1909.

ANAMNESIS: In the family history there is nothing that can have any bearing on the case. She has been married many years and has given birth to a number of healthy children. The first signs of her sickness appeared fifteen years ago, when she noticed some red spots first on the front of the chest and very soon afterward, on other parts of the body. This was diagnosed as psoriasis and on the application of a variety of ointments it healed up completely. Five years later a similar eruption appeared, although during this interval she was not entirely free from pruritus, which would give her some trouble every now and then. This time, it was a single red spot on the hairy scalp and a number of simi-

lar ones on the trunk and extremities. The lesions soon became scaly and again it was pronounced psoriasis and treated as such until it had almost completely disappeared, leaving only a few indistinct marks. Six years ago, there occurred a violent rash which, among other things, was treated with X-rays and which soon subsided, only to return in a very short time. Since then the patient has never been entirely free from her ailment and it is three years since she first commenced to observe the gradual increase in size of some obstinate spots. From that time the patient has undergone regular treatment with the Finsen and the X-ray at the Vienna Finsen Institute, which treatment the patient claims has aggravated her condition, and especially did she feel worse during the Fall of 1908. Last December, a tumor sprang up on the chest and, according to her statement, grew to its present size in a few weeks and immediately became eroded. The patient claims to be very "nervous"; she denies alcoholism and lues.

STATUS PRÆSENS: A small, well-preserved woman, irritable and anxious, complains of itching, anorexia, and disturbed sleep. On the right shoulder there is an irregular palm-sized, polycyclic lesion, which is pretty sharply defined, intensely reddened, slightly raised, and covered with scales. Within this surface some small-coin-sized, whitish, depressed areas are scattered, having a consistency like the surrounding skin. On the right arm, corresponding to the position of the biceps and extending toward the axilla, there is a figure-of-eight-shaped, small-palm-sized, flatly infiltrated area which is covered, outside of a few light pigmentations, with apparently normal epidermis. The axilla contains a flat, elevated, reddened patch of about the size of a silver dollar. The skin on the right mammary gland presents cicatrices and is pigmented, especially toward the lower and inner aspects, becoming atrophic above and externally. In general there is very little infiltration in this neighborhood, but the skin is of a peculiar rose-red color, and is sharply cut off by an arch-like border which shows some infiltration. From the anterior axillary line, running downward and forward and limited by the preceding area, there is a palm-sized patch of oval shape, raised, intensely reddened, hard, and rough to the touch. Similar and more irregular patches of serpiginous outline can be seen on the inner surface of the left arm. The trunk is covered as if by a bodice with a diffuse, scaly eruption, extending, anteriorly, from the level of the anterior superior spines of the ilia, upward, to the level of the fourth rib, laterally to just

below the nipples and posteriorly from the shoulders down to the lumbar region. This eruption consists of deep-red patches, more or less sharply defined by serpiginous margins, showing considerable infiltration and contain cicatrix-like areas. On the right side of the median line, about a hand's breadth above the level of the umbilicus, a sharply defined sessile, oval-shaped, hen's-egg-sized tumor is seen bulging from the surface; this is uneven, feels hard and is covered with a bluish-red, smooth, glistening integument. The lower parts of the abdomen and thighs present lesions consisting partly of small serpiginous, infiltrated patches which cross each other and coalesce, and partly of a rose-red, erythematous rash which, in one patch, covers the entire inner surfaces of the thighs and breaks off in a few reddish spots. On the left, there is a dollar-sized, erythema spot and several smaller ones of the same character on the right knee. The popliteal space contains considerable flat infiltration. The right foot shows exfoliation. The sacral region presents a few infiltrating patches and more erythema spots on the backs of the thighs. The glands of the groin and axillæ are palpable, but not particularly enlarged; all the other glands are negative.

INTERNAL EXAMINATION shows nothing but a mild bronchitis and a floating right kidney. The temperature and urine were normal; pulse, 90; respiration, slightly increased.

BLOOD. A mild grade of anaemia with a leucocyte count of about 8,000 in normal proportions.

HISTOLOGICAL EXAMINATION. A piece of skin excised from one of the flat infiltrations and examined histologically gave the following result:

The epidermis is diminished in width and the cells of the stratum granulosum show a large amount of oedema. The corium is the seat of a dense infiltration, diminishing in quantity as it goes downward. The infiltration consists of a variety of elements. Most numerous are small lymphocyte-like cells; but there is also a large number of oval or roundish, large cells with large, lightly staining nuclei and some fusiform fibroblast-like elements are very conspicuous. Mast cells are very few, but plasma cells are more abundant than in Case I, and, unlike that case, there is here a very marked multiformity of cells in the infiltration.

FURTHER COURSE AND TREATMENT. The eroded surface on the chest as well as all the crust-covered and moist places were covered with xeroform salve (1:9 Ung. Splx.) and bandaged, while

the dry parts were anointed with Wilson's zinc ointment. In addition, a surface of about two hands' breadths is exposed daily to the action of the X-ray (medium soft tube, distance, twice longest diameter of area to be exposed) and surrounding skin protected by a lead screen.

March 14th, temperature 38.5°C. The X-rayed areas are smaller, fissured and some places show a moderate amount of weeping. Careful search for the cause of the fever reveals nothing. Even the bronchitis is improved.

March 17th, temperature 40°C. The patient is very much depressed and anxious and very irritable; pulse 104, respiration, 36, great thirst, nausea and severe headache. On the face and on the extremities, a number of discrete, dark-red areas are noticeable, which range in size from a pin's head to a silver dollar; they are irregularly round, smooth, raised, sharply defined and without scales, causing violent itching.

In the next few days these lesions increased enormously and some became confluent, causing the arms, the legs, and the face to become highly œdematos and dark-bluish-red in color. The tumor on the chest also became swollen, eroded in toto and covered with an exudate. Therapeutically this was met largely by stimulants: Cognac, tincture of strophanthus internally and boric acid (solution) poultices externally.

March 25th. Fever is subsiding. Rash beginning to disappear.

April 1st. Subjectively, patient is well; temperature normal. The eruption has subsided, leaving a yellowish-brown discoloration and, in some places, the skin shows a fine branny desquamation. On the X-ray-treated parts the redness is also disappearing, giving place to a yellowish-brown color; many of these places flatten down and gain a normal appearance. The tumor on the breast becomes covered with epithelium and is undergoing involution.

April 12. The only trace left of the tumor is a dark-brown pigmented spot.

Now that the patient is so much improved, her strength regained, and all manifestations of reaction have disappeared the Roentgen exposures are again resumed. The blood examination at this time did not show any essential difference from the first time.

The further course of this case was entirely uneventful.

Under continued X-ray treatment the lesions gradually disappeared without any recurrence of constitutional disturbances and on June 1st, the patient was discharged with instructions to reappear in about one or two months for examination.

In Case I, the chief interest lies, of course, in the post-mortem findings; but the classical clinical picture makes the autopsy report of much greater value since no doubt can be had as to the genuineness of the mycosis, notwithstanding the extensive metastasis in the lung and the very unusual condition of the stomach, which showed an affection so similar to the skin lesions, both in character and degree of involvement. In order to form an idea how superficial the process was *i. e.*, how analogous it was to the skin affection, one only has to consider the fact that in spite of the involvement of the entire mucosa, which must have lasted a long time, the function of the stomach was never seriously disturbed; and there was no clinical evidence of it until shortly before death. Lastly, it may be of interest to note the comparatively slight changes in the blood, more especially as the lymph glands showed such enormous enlargements.

The striking features of Case II are the febrile turn and the erythema-like eruption which could not be accounted for by repeated examinations of the internal organs and certainly do not belong to the picture of mycosis fungoides. It seems that an explanation of these must be sought in some form of Roentgen toxæmia. X-ray intoxications are not at all rare. In the case of White and Burns, whether death was a direct result of it or not, it seems certain that the febrile condition and accompanying symptoms were the result of some grave Roentgen intoxication. The cases of Holzknecht and other authors are mentioned in White's article. Since then a number of cases have been reported among which is the case of Engle, which, briefly, had the following course: After 280 minutes of total radiation, the patient, a case of leukaemia, suddenly ran up a high temperature with all symptoms of toxæmia and collapse, dying in a few days and neither the autopsy nor the clinical data pointing to anything that would account for the fever; and what is more emphatic about this case is that the glands and spleen showed a phenomenal diminution in size during the febrile attack. Another case reported lately by Fricke showed, in addition to fever and toxæmic symptoms, an extensive skin eruption of a seborrhœic eczema or psoriatic character.

It is pretty well known that every living cell which absorbs

Roentgen rays undergoes a pathological change as a result of a chemical dissociation occurring in its substance analogous to the process in the photographic plate. When the process becomes sufficiently intense the pathological changes manifest themselves microscopically in a degeneration of the cell as evidenced by a granular breaking down of the protoplasm, vacuolization of the nucleus and loss of staining quality of same. Gradually this leads to a total disappearance of the cell, the products naturally being absorbed. It is, therefore, not unreasonable to suppose that when the absorbed material is in great excess as, for instance, in cases with large sensitive growths, and very frequent exposures, especially in a susceptible individual, these absorbed products acting like toxins should produce a reaction of considerable severity.

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SOCIETY TRANSACTIONS.

NEW YORK ACADEMY OF MEDICINE.

Section on Dermatology.

Stated Meeting, held February 1, 1910.

SIGMUND POLLITZER, M. D., in the Chair.

Lupus Vulgaris. Presented by DR. KINGSBURY.

The patient was shown before the New York Dermatological Society on January 25, 1910.

DR. OULMANN suggested the Holländer hot-air treatment, which he had found very useful in these destructive cases.

DR. POLLITZER said that in these very severe cases he considered excision, with subsequent skin grafting the only effective method of treatment. In this particular case, however, the method might not be entirely successful on account of the involvement of the muco-cutaneous margin.

Papulo-Necrotic Tuberculide Associated with Erythema Induratum of Bazin (?). Previously Exhibited. Presented by DR. MAC KEE.

This patient was presented at the November, 1909, meeting of the Section, at which time there were many superficial papules, some with necrotic centres, on the backs of the hands and forearms, and several deep-seated nodules on the legs below the knees. Apparently as a direct result of anti-syphilitic treatment, the papules on the hands and forearms had disappeared without leaving scars, and the nodules on the legs had greatly improved.

DR. CLARK said that he had seen the woman two and half years ago when she had had hard submaxillary glands. All the lesions then present had disappeared under strong "mixed treatment." The patient was now again improving under "mixed treatment" and he believed, therefore, that all her symptoms were syphilitic. The lesions at present did not in themselves look tuberculous.

DR. POLLITZER said that he thought all the lesions in this case syphilitic, and that there was even less basis for a diagnosis of tuberculide than there had been three months ago.

Tuberculosis Verrucosa Cutis. Presented by DR. OULMANN.

The patient was a woman, twenty-four years old. Two years ago she noticed a small spot over her left heel which gradually increased in circumference and elevation. When presented, it was the size of a half

dollar, was considerably raised above the skin, and showed the characteristic warty excrescences and the red margin. The tumor was covered with crusts. There was sometimes pain, more noticeable in winter. The occurrence on the heel the speaker said was not so frequent as on the hands, but while he had seen only one case on the hands in this country, this was the third case on the heels that he had encountered.

DR. POLLITZER said that he had found the heel a very common location for this disease; in his experience, the next most common after the hands.

DR. HUBBARD said that he had obtained good results in the treatment of these cases from the use of 50 per cent. chromic acid. The method was but moderately painful, and left a good scar.

DR. OULMANN said that he had had another case, in the same location, which he had cured by treatment with the high-frequency current, while lupus vulgaris on the buttocks of the same patient had resisted treatment much longer.

Lupus Pernio of the Face. Presented by DR. POLLITZER.

The patient was a middle-aged married woman, Russian, in good health and well nourished in appearance. For the past three winters she had had annual recurrences of the lesion for which she was presented. Her occupation, that of a street huckster, necessitated exposure to the inclemencies of the weather. The lesions were located in the middle of each cheek and on the lobules of each ear. They consisted, on the cheeks, of irregular bluish-red areas, which were somewhat infiltrated; the borders were ill-defined, and there was little or no scaling; on the ears the lobules were thickened in round nodules, and there was a linear scar on the right ear at the edge of the concha, as from a deep rhagade. The patient complained of burning and tingling, particularly in cold weather, and said that the lesions had always disappeared completely in the summer.

DR. DILLINGHAM said that he thought this a case of lupus erythematosus on account of the marked scarring and the atrophy on the left cheek.

DR. HUBBARD said that he favored a diagnosis of lupus erythematosus on account of the location, the dryness, the scaling and the atrophy.

DR. MAC KEE suggested that the color was lighter than that generally observed in pernio, and that the scaliness, infiltration and the absence of disagreeable sensations would, he thought, favor a diagnosis of lupus erythematosus. The disappearance of the lesions during the summer months might well be an error in observation on the part of the patient. The scarring, he thought, appeared more like the atrophy of lupus erythematosus than a cicatrix resulting from ulceration.

DR. HEIMAN said that there was no evidence of a true necrosis, but rather of atrophy leading to a scar, and that the œdema of the cheek was also suggestive of lupus erythematosus. The observation of the disappearance of the lesions in summer should, he believed, be taken with reserve.

DR. CLARK said that the lesions on the ears were like the necrotising chilblains in appearance, in the scarring, and in the fact that they disappeared in summer. The condition of the cheeks he thought was due to the same cause.

DR. HOWARD FOX said that he thought this was a case of necrotic chilblains rather than of lupus erythematosus.

DR. POLLITZER said that he had entertained no doubt as to the diagnosis. After careful questioning, the patient had insisted that the lesions disappeared entirely in summer, which lupus erythematosus would not do. The irregular outline of the patch also spoke against lupus erythematosus. The apparent œdema of the face, to which some of the gentlemen had called attention, he believed to be only apparent and to be really a deposit of fat in the cheeks; he could find very little real infiltration. The small scar-like spot in the cheek might be the result of some superficial accidental lesion like a scratch. The scarring on the ear was not that of atrophy, but rather of a lesion which had destroyed the epidermis. The crux of the diagnosis lay in the story of the disappearance of the lesion in summer time, and the truth of this he would investigate.

Epithelioma Treated by Fulguration. Presented by DR. MAC KEE.

The patient, a woman forty years of age, was from Dr. Fordyce's clinic. Five years ago a small ulcer with hard, pearly edges developed on the right cheek just below the inner canthus of the eye. This had been treated on three occasions with liquid air, but the recurrences were always prompt. She had then received a number of X-ray exposures without benefit. A little over a year ago she entered Dr. Mac Kee's service at the New York University and Bellevue Hospital Medical College Dispensary. At that time the ulcer was the size of a ten-cent piece. It was curetted, under cocaine anaesthesia, and the powerful unipolar, high-frequency sparks were applied to the wound for about ten seconds. The electrode consisted of a wire pointed at the end, and insulated with hard rubber. The exciting apparatus employed was a Piffard transformer and a twelve-inch coil, with twenty-five ampères passing through the primary. Only one application was made. Healing was prompt and the resulting scar was all that could be desired. There had been no evidence of recurrence.

DR. HUBBARD said that he found the freezing method actually harmful when applied to certain forms of epithelioma, especially in active cases with an infiltrated border.

DR. MAC KEE said it had been stated that the high-frequency spark had a selective action on the malignant cell. Cases were on record where, in cancer of the breast, for instance, the macroscopical evidence of disease had been incompletely removed by surgical ablation and the resulting wound thoroughly fulgurated. Some of the cases were treated five and six years ago and recurrences had not since been observed. In several instances nodules and axillary glands, proven by biopsy to have been malignant, were left in situ. These lymph nodes and malignant nodules subsequently either underwent involution or at least remained quiescent. Malignant tumors of the skin, mucous membranes and even of the internal organs had been successfully treated by the combination of surgery and fulguration. Unfortunately these favorable observations had only been confirmed to a very slight extent. Dr. Mac Kee had treated several cases of rodent ulcer by this method and while obtaining encouraging results in some, others had promptly developed recurrences. As a

result of his experience he did not believe that the high-frequency spark, applied in accordance with the Rivière or de Keating-Hart technique, was anything more than superior escharotic and he did not believe that there was any selective or inhibitory influence exerted on the malignant process.

Circinate Syphilide. Presented by DR. WILLIAMS.

The patient was a negress twenty-two years old, who gave no history of a primary lesion. The eruption began early in January of this year, and had persisted, but was fading under the influence of treatment. The face showed a few well-marked circinate lesions. She presented, also, a syphilitic alopecia, a general eruption of scaly papules, and condylomata lata.

Fibroma Molluscum. Presented by DR. MAC KEE.

The patient, a man forty-three years of age, had always enjoyed perfect health, and there was no family history of dermatological interest. Several months ago he had entered Dr. Fordyce's clinic for the treatment of eczema of the legs, when it was discovered that he was literally covered with fibromata in various stages of development. They had begun to appear when he was about seventeen years of age, and had steadily progressed in size, number and distribution ever since. Some of the tumors were no larger than the head of a pin and very hard, while others were as large as a Brazil nut and soft. There were, also, many small tumors of a bluish color, about the size of a penny, which would entirely disappear under pressure. There was no pigmentation, no pain, nor was there any evidence of defective mentality.

DR. HEIMAN said that this was evidently a case of multiple fibroma molluscum, but that in the absence of any pigmentation, and of pain or tenderness, he would hardly call it Recklinghausen's disease.

DR. OULMANN said that in his experience pain was usually present in Recklinghausen's disease.

DR. POLLITZER said that it was unusual to find these cases without some pigmentation of the skin, and some defect of the intelligence, but that none of the accessory symptoms were necessary to a diagnosis of Recklinghausen's disease, and that as a rule very few of the lesions were painful.

Lichen Planus in a Negro. Presented by DR. WILLIAMS.

The patient was thirty-four years old; he denied having had syphilis. The present eruption appeared on the hands about two years ago; about one year ago it developed on the ankle, and then spread to the knee and the genitalia. The eruption had periods of improvement, but had never entirely disappeared. It was very itchy. The skin in the affected regions was darkened, thickened and uneven, as if the plaques were formed by the coalescence of papules. The borders were fairly distinct, but irregular. On the hands were a few flat, shiny, polygonal papules. The patient said that although vesicles would sometimes ap-

pear, they would dry up immediately after rupture, and that there was no oozing. The diagnosis was made on account of the location, the dryness, and the few distinct papules.

DR. HOWARD FOX said that there was very little here on which to base a diagnosis of lichen planus. There were a few characteristic papules on the wrists, but all the other patches might well be eczema.

DR. DILLINHAM agreed with Dr. Howard Fox. The papules on the hands were like those of lichen planus, but were hardly enough to establish a diagnosis, while the patches elsewhere were more like eczema.

DR. OULMANN said that he thought this patient had eczema, and that the seborrhœic dermatitis in the axillæ favored this diagnosis.

Lepra (Two Cases). Presented by DR. HOWARD FOX.

Both of these patients had been shown before the New York Dermatological Society on September 28, 1909.

DR. MAC KEE thought that the nodules and the throat ulcers might be greatly benefited by X-radiation. In fact, according to recent experiments in the Philippines, one might hope for a complete cure in the tubercular type of the disease by this treatment.

DR. HUBBARD said that one of these patients might well be a source of infection, if such a thing were possible in this climate, and that it would be most interesting to trace the subsequent history of his neighbors, to determine if any other cases developed. He had been able to watch the household of one leper for eight or nine years, and of another for seven years, but he had seen no secondary case in either instance.

DR. DILLINGHAM said that while it would undoubtedly be interesting to trace the history of these patients' neighbors, it was practically impossible to do so, as they were constantly moving.

Melano-Sarcoma. Presented by DR. HOWARD FOX.

This patient had been presented before the Section by Dr. Aitken on March 2, 1909. Dr. Fox requested an expression of opinion as to the possibility of saving the man's life by amputation above the knee.

DR. OULMANN said that high amputation would give the man his best chance.

DR. POLLITZER said that amputation at the hip would give the man his best chance of recovery, and that he would advise it.

CHARLES M. WILLIAMS, M. D.,
Secretary.

PHILADELPHIA DERMATOLOGICAL SOCIETY.

The regular monthly meeting of the Philadelphia Dermatological Society was held in the Gross Room of the College of Physicians Building on February 14, 1910, at 8:30 o'clock. DR. M. B. HARTZELL, in the absence of DR. DAVIS, presiding.

Tuberculosis Cutis in an Infant. Presented by DR. KNOWLES.

A little girl, eleven months of age, was exhibited with four lesions on the left lower leg and foot, of six months' duration. The lesions

were dime to one-half-dollar in size, of a reddish color, sharply marginate, and with somewhat papillomatous surfaces. There was a sinus on the posterior portion of the leg, just below the popliteal space, leading to the bone. The infant had a very large head and was quite anæmic in appearance. The Moro and von Pirquet tests were positive.

DR. HARTZELL and DR. STELWAGON said they thought the clinical appearance was quite characteristic.

DR. VAN HARLINGEN thought that the disease was of the lupus vulgaris type.

Eczema of the Sharply Marginate Type. Presented by DR. HARTZELL.

The patient exhibited was a girl of twelve years, who presented dime to dollar-size, sharply marginate, oozing, slightly crusted, reddish patches, on the anterior and outer surfaces of both lower legs. These patches made their appearance three months ago. There was also a slight erythematous-squamous condition of the cheeks and chin. A curious retiform pigmentation, of a brownish color, was noted on the inner surfaces of the legs, extending from just above the knees to the ankles. Pruritus was marked.

DR. HARTZELL said that the case belonged, probably, under the so-called parasitic eczema type.

DR. STELWAGON said that the case should be classed in the parasitic group.

DR. STOUT considered that these cases were exceedingly hard to treat.

DR. SCHAMBERG thought that this type was hard to differentiate from seborrhoeic eczema.

Dystrophy of all the Nails. Presented by DR. KNOWLES for DR. DAVIS.

The patient, a boy of eleven, gave a history of having had the present condition of the nails, although not in such a severe form as at present, for three years. The posterior nail-fold was much thickened, on all of the fingers, including the thumbs, suggesting an arthritic deformity. The nail-bed was exposed on one-half of the distal portion of each nail. The posterior portion of the proximal part of the nail was hypertrophic, quite rough, and fissured. The distal portion of the nail-bed, on several of the fingers, exhibited haemorrhagic points where traumatism had occurred because of the lack of nail protection. The toe-nails showed the same deformity, but the condition was not so marked. Microscopic examinations were negative.

DR. STOUT referred to a case of tinea favosa, that he had recently seen, with a somewhat similar deformity of the nails.

DR. SCHAMBERG had recently had a lichen planus patient, who also had a dystrophy of the nails.

DR. HARTZELL mentioned the association of arthritis of the terminal phalanges of the fingers, resembling arthritis deformans, with dystrophy of the nails. The patient also had the dystrophic condition of the toe-nails, but no arthritis of the toes.

Lupus Erythematosus of Unusual Type. Presented by DRs. STELWAGON and STOUT.

The patient was a female of twenty-five, who had first noticed the appearance of the present eruption five years ago. Several members of the family had died of tuberculosis; her mother, father, a brother, and a sister. She was born in England and had always been fairly healthy, no signs of tuberculosis being present. Dr. Spotford Taylor, of Liverpool, had first treated the case. The eruption developed near the inner canthus of the left eye, extending to the nose; other lesions shortly afterward appeared on the cheeks and the forehead; one month later attacking the scalp. The entire scalp was denuded of hair, excepting a slight fringe below the occiput, on the posterior surface, and the disease was still active in this location. One month ago the forearms were attacked by superficial gyrate and annular lesions. The eruption was from split-pea to silver-dollar in size, in the form of plaques and rings. The lesions were mostly light red in color and had a slight scale on the surface. The arrangement on the face was not symmetrical.

DR. STOUT, and also DR. KNOWLES, referred to cases of lupus erythematosus, in which the disease had been limited to the scalp.

DR. STELWAGON said that he thought some of the lesions in the present case resembled markedly those found in seborrhœic eczema. In a great many cases of erythematous lupus the lesions were not symmetrically arranged on the cheeks and the nose.

Case for Diagnosis. Presented by DR. KNOWLES.

A woman of thirty-seven years, born in Russia, first came under observation in October, 1909. At that time she had a generalized eruption, excepting the face, the lower legs, the forearms, the hands, and the feet; consisting of superficial, pinkish, annular lesions, with a very faint scale on the surface. These lesions were from dime to one-quarter-dollar in size, and markedly pruritic. According to the patient the eruption had started two weeks previously. After treating the eruption with a saturated solution of boric acid and a laxative mixture for three weeks, there was entire disappearance of the same. On the twenty-fourth of January, the patient again came under observation with an eruption, of five days' duration, of the same type as before. The same history was again elicited, that one annular lesion, almost silver-dollar in size, had appeared a week before the generally distributed outbreak; the same areas being exempt as in the previous attack. In the second attack, however, there was a tendency for the annular lesions to coalesce and form, on the shoulders and back, gyrate and festooned patches. The original spot, pointed out by the patient, in each attack, was larger and more pronounced in every way than any of the others. At the time the case was presented, the eruption had faded somewhat, a saturated solution of boric acid having been used locally. Because of the history, the char-

acter of the lesions, quite superficial, annular, and with a very faint scale, and apparently running a course of between four and five weeks, the possibility of a recurrent pityriasis rosea had been considered.

DR. HARTZELL said he thought the correct diagnosis was seborrhœic eczema, as there was a little too much infiltration in some of the annular lesions to warrant the diagnosis of pityriasis rosea. In the latter disease he had never seen coalescence of the annular lesions to form gyrate conformations.

DR. STELWAGON thought the case probably eczema seborrhœicum.

Syphilis Extranigenitally Acquired. Presented by DRs. STELWAGON and STOUT.

The patient exhibited was a negro of twenty-four years. In the middle of November, an infiltrated lesion developed just above the pubic hair, on the lower portion of the abdomen; the chancre finally became one-half-dollar in size, densely infiltrated, and considerably raised. Six weeks after the appearance of this lesion a generalized eruption developed, large flat papular in type, and with a tendency to become annular in the neighborhood of the mouth. The various concomitant signs of syphilis were present.

DR. HARTZELL said that the miliary eruption was more common than the large flat papular type in the negro.

DR. SCHAMBERG considered the flat papular type unusual in this race.

Case for Diagnosis (Previously Exhibited). Presented by DR. SCHAMBERG.

The patient, a male of twenty-one years, exhibited at the last meeting of the Society, was again presented to the members by Dr. Schamberg. The eruption was limited to the forearms, chiefly the flexor surfaces; it was slightly elevated, and consisted of pinhead-sized papules; some of the lesions had a fine scale on the summit. Pruritus was marked. The condition had been somewhat improved since the last meeting by the use of a mild sulphur ointment. The lesions were now flat, barely elevated papules, slightly shiny in appearance.

An atypical type of lichen planus was suggested by those present.

Dermatitis Congelationis and Alopecia Areata. Presented by DR. KNOWLES for DR. DAVIS.

The patient exhibited was a male of twenty-nine years, who gave the history of having had an affection of the hands and feet every winter for quite a number of years, starting with the appearance of cold weather and lasting for some months. There were several annular patches, reddish-purple in color, livid, with darker centres, some having a slight scale, resembling erythematous lupus, on the dorsal surfaces of the hands and fingers. Burning was intense, particularly when in a warm

room. The feet were also red, but the blush was more uniformly distributed. There were also two areas on the scalp, denuded of hair, the one dime and the other one-half-dollar in size. The latter condition had developed some eight months previously.

DR. HARTZELL said that he had seen several cases of this affection, in those individuals who were exposed to the cold. He mentioned particularly a case that Dr. Knowles and himself had seen in the University Hospital.

DR. VAN HARLINGEN said the present case resembled the so-called erythema pernio, as seen in winter, in England.

Chronic Recurring Purpura. Presented by DR. SCHAMBERG.

A male of forty-four years, a huckster by trade, was shown to the Society by Dr. Schamberg. Two years ago the first purpuric lesions had appeared, attacking the lower portions of the legs; since then the patient had practically never been entirely free from these cutaneous haemorrhages. The lower legs, including the ankles, and the feet had been the usual sites of attack; the arms and the hands, however, had been involved in some of the outbreaks. The lesions were typical cutaneous haemorrhagic spots, from small pinhead to dime in size, the lower legs and the dorsal surfaces of the feet being involved in the present attack. The patient had a chronic nephritis, with albumin and casts in the urine.

DR SCHAMBERG said that purpura could scarcely be considered as a separate entity, but only as a symptom of some underlying cause.

DR. STELWAGON referred to the fact that workers in benzol were subject to purpura, of either the simple, or haemorrhagic type.

DR. HARTZELL mentioned a patient that he had had, in whom tonsillitis, purpura, and polyarthritis alternated.

Erythema Multiforme with Continued Fever. Presented by DR. GWYN (by invitation).

Dr. Norman B. Gwyn, by the invitation of the Society, presented the history of a man twenty-three years of age who had had eight weeks of fever (continuous) in the Spring, with three weeks of a blotchy macular eruption. Neither malaria nor typhoid fever was demonstrable by blood examinations or other tests. There were no local signs of these diseases, and there was no leucocytosis. The temperature fell rather abruptly when mercury and the iodides were started. The patient was free from fever from May until September, when hyperpyrexia reappeared. Quinine, salicylates, and mercury had no effect on the condition, although continued for some weeks. The macular eruption appeared and disappeared on the hands, the arms, the legs, and the face for three weeks, beginning in November and lasting until January. This recent outbreak was accompanied by attacks of abdominal pain in the region of the gall-bladder and the appendix; not associated with leucocytosis, increased pulse rate or fever. There was a cessation of fever by the middle

of February of last year. The patient had been completely well during the last year.

Those present agreed that it was one of those cases, as described by Osler, of erythema multiforme with abdominal crises.

DR. STELWAGON exhibited a convenient source of carbon dioxide snow. It was a small cylinder, containing liquid carbon dioxide, 12 inches long and $1\frac{1}{4}$ inches in diameter, sold by automobile supply companies for the quick and laborless inflation of an automobile tire. One cylinder gave an ample supply of snow for a single treatment (for several if followed one after another). With several of these small cylinders on hand, and the necessary valve cock, one was well supplied. When necessary, a cylinder and valve cock could be readily slipped into the pocket and the application conveniently made at the patient's home.

FRANK CROZIER KNOWLES, M. D.,
Reporter.

BOSTON DERMATOLOGICAL SOCIETY.

October Meeting, 1909.

DR. JAMES C. WHITE in the Chair.

Lupus Vulgaris Treated by Boeck's Method. Presented by DR. C. J. WHITE.

This case was presented to demonstrate the effect of Boecks new pyrogallop method upon tuberculous tissue. As might be remembered (*Monatsh. f. prakt. Dermat.* 1909, xlviii, p. 439) this preparation consisted of pyrogallic acid, resorcin and salicylic acid, of each seven parts; gelatinum and talc, of each five parts; and was applied to the diseased tissue with a wooden spatula and covered with a thin layer of absorbent cotton. Within twenty-four to forty-eight hours, chocolate colored pus would begin to run from the lower level of the dressing and continued to appear in gradually diminished amounts. At the end of a week the application should be removed by the aid of diachylon ointment, and a clean granulating surface was disclosed, dotted with numerous islands of healthy, active epithelium.

During the past summer this treatment had been investigated thoroughly in all cases of lupus vulgaris in Dr. White's service at the Massachusetts General Hospital, and the following conclusions had been drawn:

1. There was no doubt that this preparation had great power in causing the rapid disappearance of tuberculous tissue in the skin.

2. The recuperation of the skin from the effects of this active and selective destructive preparation was very striking.

3. The pain accompanying this method varied greatly; strong men had suffered severely, while little children had been totally oblivious of its action. In other words, no definite prediction could be made of its effect upon the feelings of the patient, but as a rule severe pain had been the exception.

4. Despite these advantages of rapid destruction, equally quick recuperation and comparative painlessness, this method had proved a disappointment in its permanent result, for at the end of several months the lupus tissue was beginning to assert itself again in several of the patients.

Erythrodermie Congénitale Ichthyosiforme. Presented by DR. C. J. WHITE.

The patient was an intelligent, healthy, well-developed boy of five years, who had been in the skin ward of the Massachusetts General Hospital for the last six weeks. At birth, or soon after, the skin of the thighs and nates became rough and this condition had gradually extended until the whole body was affected.

When he entered the hospital the general scaling and the roughened state of the integument, suggested a mild ichthyosis, but in addition, there were narrow, linear bands of depressed skin on the forehead, forearms, abdomen and in the popliteal spaces, which made one hesitate between the diagnosis of scleroderma or of idiopathic atrophy.

Under the influence of baths, salicylated soap plaster, ointments and thyroid extract, the general integument had become nearly normal, but the curious atrophic bands, though not so conspicuous, still persisted.

In the discussion, the difficulty of accurately classifying this case was generally agreed upon. The trend of opinion, however, was that the case was at least allied to, if it did not belong in the class recently described in the *Annales de dermatologie et de syphiligraphie* under the title of Erythrodermie Cogénitale Ichthyosiforme.

Framboesia (?). Presented by DR. C. J. WHITE.

This case, Dr. White said, was to be reported later in detail, so that only a brief mention of its salient clinical points would now be reported.

The patient was a Porta Rican, twenty years of age; a sailor by occupation. The four lesions on his lip, dorsal surfaces of two fingers and forearm, had existed from one and a half to three months, and consisted of dry, conical or truncated, firm, painless, yellowish nodules, elevated about $\frac{1}{4}$ to $\frac{1}{2}$ inch above the normal surrounding skin and apparently topped by horny matter. There was general adenitis, especially of the epitrochlear glands, which had reached the size of a large

bean. The physical examination, including that of the blood and urine, was negative. There was no sign of syphilis in the Wassermann test. Pathologically, the lesion consisted of a granuloma, covered by acantholic and keratotic epidermis. The Levaditi silver stain revealed small numbers of delicate spirochaetae.

In the discussion the chief emphasis was laid upon the striking resemblance of the lesions to those of syphilis. Yet, in spite of that resemblance, close analysis did not support the diagnosis of syphilis.

Urticaria. Presented by DR. SMITH.

Over the trunk of this patient, were scattered patches of an eruption which at present suggested more a papular eczema than an urticaria. Dr. Smith, however, had been able to follow the evolution of the lesions closely from the original eruption of wheals through to the present papular lesions.

Syphilis. Presented by DR. SMITH.

This boy had previously been considered a cretin although, as Dr. Smith demonstrated, the triad of Hutchinson and other characteristic, but less well-known signs of syphilis were present. One of the most interesting, but also puzzling manifestations, was a thickening about the lower end of the femur, the exact nature of which was not made clear even by a radiograph. Further study, Dr. Smith said, would be given to this.

Erythema Multiforme. Presented by DR. SMITH.

The patient, a woman, presented an eruption on the sites characteristic of erythema multiforme, but with lesions so large and thick that they even suggested, in a certain degree, the possibility of the affection being mycosis fungoides.

Case for Diagnosis (Syphilis?). Presented by DR. SMITH.

The patient was a Chinaman who presented innumerable, small, sharply defined, depressed scars over the face, trunk and extremities.

The general opinion was that the scars might have been left by some previous syphilitic eruption, but that a positive diagnosis from the clinical appearances alone was not possible.

Lymphangioma. Presented by DR. TOWLE.

The patient was a woman who had had her present trouble for one year. Behind the left ear, and extending just below the lobe forward a short distance upon the check, was a roughly circular lesion about the size of a twenty-five cent piece. It was deep seated, freely moveable over the deeper tissues, but attached to the skin, firm and elastic, and tender over only one area; just below the ear. The skin was pushed upward above the general surface, especially about the periphery of

the lesion. About its border could be felt a series of small, firm nodules, like the knobs of a brooch. The centre was depressed below the border. The skin over the centre showed small and large dilated vessels, and toward the lower edge, a small cluster of very minute vessels.

In the discussion as to treatment, it was suggested that freezing with carbon dioxide snow should be tried first and that failing, that the lesion should be excised with a very wide margin.*

* Since this case was presented she had received two applications of carbon dioxide snow of moderate duration and intensity, with the result that the lesion had been very greatly diminished.

F. S. BURNS, M. D.,
Secretary.

REVIEW
OF
DERMATOLOGY AND SYPHILIS.
Under the charge of GEORGE M. MAC KEE, M. D.

DISEASES OF THE HAIR AND NAILS.

By FRANK CROZER KNOWLES, M. D., Philadelphia.

A Case of Alopecia of Dental Origin. M. P. JOURDANET, *Bull. Soc. franc de dermat. et de syph.*, April, 1910, p. 77.

Jourdanet noted on the nape of his own neck, a pea-sized plaque denuded of hair; this area increased in size and after a considerable interval he consulted Dr. Jacquet. A decayed wisdom tooth was found on the same side as the patch of alopecia and the case was considered as one of dental origin. Hyperesthesia of the skin was found on the left side, on pressing on the occipital nerves, and the ganglia under the jaw. The irritability of the nerves disappeared upon drawing the tooth and the hair returned in the involved area.

Alopecia of Dental Origin. ROUSSEAU-DECELLE, *Bull. et mêm. Soc. méd. d. hôp. de Paris*, Jan. 21, 1909, p. 72.

There are two theories as to the causation of alopecia areata, the trophoneurotic and the parasitic. Max Joseph and also Mibelli were able to cause the falling of the hair by section of the posterior root of the second cervical nerve. Rousseau-Decelle considers that the dental trouble directly or indirectly affects, through the nerve involvement, the nerve centres and thereby the various functions of the body. In twenty-seven out of two hundred cases of alopecia areata of Jacquet's and in eighteen out of seventy cases of the author's, the hair loss was associated with nerve trouble. Twelve out of eighteen of these followed trigeminal nerve pain. The alopecia in these forty-five cases developed on the same side as the pain in the nerve. The left side is most frequently attacked; in twenty-eight cases of dental origin, eighteen were found on the left and the other ten on the right side. Alopecia following irritation of the teeth of the lower jaw is almost invariably located below the occiput, on the same side as the nerve involvement. Jacquet had seven cases and the author nine cases of alopecia associated with the evolution of the wisdom teeth of the lower jaw, in fourteen of these the area of alopecia was found on the nape of the neck. The canine or the contiguous teeth were found to be at fault in five cases of alopecia of the chin. In four out of five cases with pain of the teeth, of

the superior maxillary bone, the bald areas were found in the frontal or the parietal regions. Rousseau-Decelle remarks on the hyperæsthetic areas of the skin, following the course of the nerve supplying the tooth and the bald plaques. Eight cases were given in detail to prove the assertion of the author as to the dental origin of alopecia areata.

JACQUET and SERGENT, *Bull. et mèm. Soc. méd. d. hôp. de Paris*, March 18, 1909, p. 467.

The writers recorded a case of alopecia with facial neuralgia. The article occupies one and one-half pages and is chiefly filled with the endeavor to combat the contention of Sichard that facial neuralgia has nothing to do with alopecia areata.

The Actual State of the Trichophyton in the Province of Parma, Italy.

B. D. FAVERA, *Ann. de dermat. et de syph.*, 1909, p. 433.

The study covers a period of sixteen months from January, 1908, to April, 1909. Although a short clinical note was made in each case, the investigations practically consist of microscopic and cultural experiments. The investigator substituted glucose for the maltose in Sabouraud's culture medium, using both media in his experiments. After careful investigation he concluded that Sabouraud's technique is the most simple, the most accurate and should be adopted universally by investigators in this line. One hundred and forty-four cases of trichophyton infection were examined. Cultures gave sufficiently distinct characteristics to divide the cases into eight separate groups:

Trichophyton violaceum was found in seven non-inflammatory, and in seventeen slightly inflammatory tineas of the scalp, in two of the skin surface and in five cases attacking the nails.

Trichophyton acuminatum was discovered in seven non-inflammatory, and in nine slightly inflammatory tinea of the scalp, two of the inflammatory type of the beard and in six of the skin surface.

Trichophyton cerebriforme was noted in three of the non-inflammatory tineas, and in one slightly inflammatory tinea of the scalp, in eight non-inflammatory, and in twenty-five inflammatory ringworms of the beard and in six of the skin surface.

Trichophyton fumatum was seen in one non-inflammatory, and three slightly inflammatory of the scalp, in twelve inflammatory of the beard and in four of the skin surface.

Trichophyton rosaceum was observed in one non-inflammatory and in one slightly inflammatory of the scalp, in two non-inflammatory and in one inflammatory of the beard and in one case of nail involvement.

Trichophyton regulare was found in two cases, one of the non-in-

flammaty type of the scalp and the other of the inflammatory type of the beard.

Trichophyton gypseum granulosum was discovered in two cases attacking the skin surface.

Trichophyton faviforme was noted in one tinea case of the scalp, of the kerion type, in six of the inflammatory type of the beard and in eight cases attacking the cutaneous surface.

Seven of these types were described by Sabouraud, and the last, the trichophyton faviforme, was first mentioned by Bodin.

Study of the Trichophyton of the Scalp in Roumania (Trichophyton Violaceum). S. NICOLAU, *Ann. de dermat. et de syph.*, 1909, p. 609.

The trichophyton possesses a uniform and common morphology, the rows of spores occupying, excepting in rare cases, the interior of the hairs. The trichophyton crateriforme is found in from eighty to eighty-five per cent. of the ringworm cases attacking the scalp in France, particularly in the vicinity of Paris; the trichophyton acuminatum and the trichophyton violaceum are distinctly rare. The trichophyton crateriforme is but rarely found in either England or Italy. The trichophyton violaceum, which is rare in France, and constitutes about five per cent. of the cases, is frequently in excess in Italy, and constitutes the majority of all of the cultures in Roumania. Nicolau studied the trichophyton, particularly the trichophyton violaceum, found in the hairs of the scalp. His study consisted of forty-five cases extending over three years. The study was made up of the clinical description, the location on the scalp and the characteristics of the lesions, the microscopic examination of the scales and the hairs, as to the disposition of the parasite in the hairs and the mechanism of invasion, the bacteriological study of the parasite, cultural experiments, the study of the usual and the unusual forms, a botanical study of the organs of fructification, in drop suspensions and in the incubator. The pathological anatomy was studied in sections from two patients. Inoculation into animals was performed in a few instances, to be described in detail in a later paper. Fifteen of the cases developed in girls and thirty in boys. The ages varied from four to twelve years. The culture medium was the same as used by Sabouraud. The inoculated culture tubes were kept at room temperature; the colonies started to appear in six to eight days. The article covers thirty pages and contains some excellent plates.

A Further Contribution to the Study of the Endothrix Trichophyta Flora in London. Illustrated by a Collection of Cultures and Photographs. T. COLCOTT FOX, *Brit. Jour. Dermat.*, 1909, p. 271.

The author started the investigation on this subject in 1901.

Among 750,000 children attending 941 elementary day schools, and among still younger children, the endothrix trichophyton ringworms are only occasionally met with, about five per cent. in hospital and private practice. Among children chargeable to the Poor Law, the proportion of endothrix trichophyton ringworm is much larger. For a time, after the instillation of the first ringworm school (1901-2) by the Metropolitan Asylums Board, forty per cent. of the cases admitted were due to the endothrix trichophyta; thirty per cent. in 1903; 15.5 per cent. in 1904; 14.8 per cent. in 1905; 14.6 per cent., in 1906; 13.3 per cent. in 1907; 14.1 per cent. in 1908, up to the end of September. Fox had under observation in 1908, up to the end of September, at these schools, six hundred and thirty-nine cases of endothrix trichophytosis. The author considers that the ringworm caused by this type of fungus is easily recognized clinically; slightly scaly macules, on which diseased stumps may be found disseminated among some healthy hairs which have escaped infection, being the characteristic picture. The diseased stumps on the macules may be single or in groups of two or three, up to a dozen or more, and in children with long hair the disease often escapes notice; patches may be confluent. The kerion type from this fungus is most exceptional. The diseased hairs are frequently more or less hyperpigmented in English children, although almost colorless hairs may show the disease where the stumps are not pigmented, and especially where there is a large patch, the diagnosis from the microsporon ringworm may, clinically, be very difficult. A striking feature of the diseased stump is the characteristic of turning on itself, presenting, when the stump is pigmented, the appearance of a black dot, often partially obscured by scales. This appearance has given rise to the name "black-dot ringworm." Fox has met with but two nail cases at the school, one in a boy with scalp ringworm of the endothrix type and the other in an attendant nurse. The author concludes that the endothrix trichophyton flora in London is very much the same as that found in Paris. He used the culture medium suggested by Sabouraud, growing the fungus at the ordinary room temperature. The various cultures were divided into four groups: a cream-colored or white crater (*trichophyton crateriforme* of Sabouraud) in about thirty-eight per cent. of the cases; a primrose-colored crater in about twenty-one per cent.; a gray-yellowish culture in twenty-six per cent., which it took him some time to definitely identify with the *trichophyton acuminatum* of Sabouraud; a violet-colored culture, the *trichophyton violaceum* of Sabouraud, in fifteen per cent. of the cases. A few cultures were also found which could not be identified with any of the above. A full description is given of each of these types.

The State of Degeneracy (The Clinic of Parasyphilis).

ERNST DELBANCO, *Monatsh. f. prakt. Dermat.*, 1909, p. 214.

The paper deals with an undersized, poorly-developed boy of ten

years, with feeble intellect, normal reflexes and sensations, and with a negative ophthalmoscopic examination. The skull was large, some of the fingers showed a webbed condition, but the ears were not deformed. Hutchinson's teeth were present, and the author considers that all the other changes from the normal were caused by hereditary lues. The mother was married three times, the first pregnancy with the third husband aborted at the third month, the second was the present imbecile boy. The husband was not examined, but the mother of the patient exhibited no manifestations of the disease. The boy has had an alopecia areata since the third year of life, involving the entire left side of the hairy scalp, from the forehead to the occiput; there is also a palm-sized bald spot on the right side of the scalp, posteriorly. All of the nails of the fingers and of the toes have presented changes during the last year. There is a hyperkeratosis of the nail-bed and an elevation and thickening of the nail-plate. The thickened nail-plate is dark in color; the distal portion of the nail has a concave notch occupying most of the free edge. The nails have a marked tendency to split and to break off in large strips, leaving the thickened keratotic nail-bed uncovered; brittleness is present. Careful examination failed to find an organismal cause of the nail condition. The shape of the nail suggested the anomaly known as onychogryphosis. Delbanco considers that all of these changes are from the same source, a trophoneurotic stigmata of degeneracy, syphilitic in origin. The Wassermann-Neisser-Bruck serum reaction proved negative in both the mother and the boy.

An Unusual Cause of Nail Disease: Median Longitudinal Striae on Syphilitic Nails. JULIUS HELLER, *Dermat. Ztschr.*, 1909, p. 31.

Lines are seen on the nails in certain dermatoses; a certain grade of lines being found on the nails in cases of eczema. White found in 485 cases of nail disease vertical ridges on ninety-nine. Deep ridges are, however, of unusual occurrence, having been most markedly found in the affection described by Dubreuilh and Fréche as onychorrhesis, and by Unna as Schizontychie. Heller has carefully examined all of the nails of his syphilitic patients for the last fourteen years and has never, until now, noticed upon the middle of the nail-plate, furrows as a sign of lues. He has had two cases of long and deep furrows of the median line of the nails in syphilites and has been unable to find reference to the same in literature. The author gives a complete description of the cases.

Onychia Blastomycotica. J. T. SELENEW, *Ikonographia Dermatologica*, Fasc. 3, Tab. 23.

A woman teacher of thirty-five had noticed, for several years, a derangement of the nails of the first and the fourth fingers, and also of

the big toe of the left foot. The clinical appearance resembled trichophyton infection. Microscopic examination proved that the nail condition was caused by the blastomyces. Four children in the family suffered from a nail disease of the same character

On Folliculitis Decalvans. RICHARD L. GRÜNFELD, *Arch. f. Dermat. u. Syph.*, 1909, p. 331.

The article covers thirty-five pages, there are three excellent plates, and one hundred references. The numerous titles under which the condition has been reported are given in detail, describing the cases that have occurred in the different countries, from Neumann's complete description, in 1880, up to the present time. The somewhat analogous cases reported by Erasmus Wilson and Tilbury Fox in 1873 are also mentioned. Brocq collected from the literature, from 1885 to 1905, twenty-nine cases of this disease; twenty of these occurred in men and nine in women. Eleven of the cases were reported from France, three from America, seven from England, four from Germany, three from Italy, and one from Switzerland. Grünfeld has collected from 1904 to the present time twenty-two additional cases; seventeen being typical and five atypical examples of the disease. He divided the typical pseudopelades into three groups: First, those with many small bald areas; second, those with a tendency to form large spots; third, those having the combined characteristics of groups one and two. Of the five atypical cases, one was associated with alopecia areata, another had a pseudopelade and a suppurative folliculitis decalvans, one was accompanied by a scleroderma, and the two others were noted in cases with lupus erythematosus of the scalp. Grünfeld reports five cases of folliculitis decalvans, all occurring in males, aged respectively, thirty-eight, twenty-five, twenty-nine, thirty-two, and forty-three years. The occiput was involved in all five cases. Three of the cases were absolutely typical and the other two corresponded to the types reported in literature as folliculitis decalvans. The author cites cases and references to prove the difficulty in diagnosing the condition.

Hirsuties in an Infant. SEQUEIRA, *Brit. Jour. Dermat.*, 1909, p. 58.

Sequeira exhibited before the Dermatological Section of the Royal Society of Medicine, a female child eighteen months of age. The infant was noticed to be very hairy at the time of birth. At the present time the forehead is covered with fine hairs, the nose has many long fair hairs on it, there is a copious growth around the mouth and on the chin, also on the cheeks and the ears. The hairs everywhere are fair. Patches of hair are also present on the trunk, the most extensive being above the gluteal cleft. The fact that a considerable amount of hair has disappeared from the trunk, suggests the possibility that it may also disappear from the face.

Ringworm of the Scalp in an Adult. J. M. H. MAC LEOD, *Brit. Jour. Dermat.*, 1909, p. 90

Mac Leod reported a case of ringworm in an adult due to the microsporon fungus; the patient was a woman forty-three years of age. The patch was of the kerion type, one-quarter-dollar in size, an inch within the hairy scalp, on the left side of the nape of the neck. The fungus had the appearance and the arrangement of the microsporon Audouini. The patient had three children, all with ringworm of the scalp, of the non-inflammatory type.

A Case of Pseudopelade (Brocq). J. M. H. MAC LEOD, *Brit. Jour. Dermat.*, 1909, p. 27

Mac Leod showed before the Dermatological Section of the Royal Society of Medicine, a male, thirty-four years of age, with a well-marked case of this disease. Three years ago a patch of baldness, about the size of a thumb-nail, appeared on the vertex of the scalp, and since then the hair has been slowly falling out. When the case was exhibited, numerous atrophic areas had coalesced to form irregular patches over the entire vertex, extending forward to the forehead and down to the ears at the sides. Numerous pits were present where the hairs had fallen out. Seborrhœa affected the entire scalp, but was most marked at the mouths of the follicles, where the hairs were loose and about to fall out. The affected hairs came out readily when pulled and presented a swollen, moist root sheath, adherent to the intra-follicular portion, or where the affection had persisted longer, the root sheath had dried up to form a cheesy powder. The hairs of the beard, the mustache, and the eyebrows were not affected. Cultures proved negative.

A Case of Fragilitas Crinium. G. W. DAWSON, *Brit. Jour. Dermat.*, 1909, p. 54.

Dawson exhibited a woman of twenty-eight years, with fragilitas crinium associated with knotting of the hair. Seven months ago the patient noticed the tendency of the hair to break off close to the scalp, particularly over the parietal region. Some of the hairs showed nodular swellings, which on microscopic examination proved to be half-hitch knots, situated one to two inches from the root of the hair. There was a seborrhœic condition of the scalp and the face, and hirsuties of the latter.

BACTERIOLOGY AND PARASITOLOGY.

By R. C. JAMIESON, M. D., Detroit, Mich.

Sporotrichosis.

BROCQ, LE MONDE MÉDICAL, May, 1910, No. 297,
p. 129.

The sporotrichum Beurmanii is capable of causing pathological lesions in man, which simulate tuberculosis and syphilis.

It is encountered on certain vegetables and in those who handle them, often causing a septicæmia.

The cutaneous manifestations take the form of circumscribed, nodular gummata, which are multiple and show predilection for the limbs, and may be hypodermic, dermic, or epidermic. Their size varies and they are of a pasty consistency. The gummata increase slowly in size and finally reach a stage of softening, at which time an abcess forms and this slowly discharges from one or more openings.

The ulcers in healing may simulate tuberculous and syphilitic lesions, but have undermined edges, irregular margins and a floor covered with a yellowish-gray scab in contradistinction to specific ulcers; while the tuberculous lesions have ragged edges, a rough floor and glandular enlargement. The resulting scars are smooth, regular, purple in color, and multiple. Other locations are muscles, synovial membranes, and periosteum. The disease may be localized in its distribution or it may produce grave septicæmic disturbances.

Laboratory methods give the only safe means for diagnosis, cultures on Sabouraud's medium showing as dark-brown discs with a raised centre and a spreading border. The microscope shows a mycelium with ovoid spores.

Treatment is curative if the nature of the disease is recognized, potassium iodide being given in $\frac{1}{2}$ to 1 dram a day, and continued for a long time after apparent recovery. Abscesses should not be incised. Aspiration may be employed, followed by the injection of Gram's iodoiodide solution.

Sterilization of the Skin by the Use of an Alcoholic Solution of Iodine.

H. F. WATERHOUSE, *Lancet*, 1910, clxxviii, No. 4520, p. 1063.

The use of iodine for the purpose of sterilizing the skin was suggested to the author on account of its use in sterilizing catgut. He details his experiences in connection with 150 cases, some of which were emergency cases and some were regular operative ones. In this series 149 cases healed by first intention after using iodine alone to sterilize the skin. In the first few cases he used 6-8 per cent. iodine in alcohol, but soon changed to a 2 per cent. solution. The first application is made two hours before operation, the second is made one hour before, the last application being made on the operating table.

He advocates the method highly as it is far more convenient and surer than other methods, but cautions against using methylated instead of the rectified spirits in preparing the iodine solution.

Notes on the Infectivity of Scarlet Fever. T. HUNTER, *Lancet*, 1910, clxxviii, No. 4529, p. 1688.

The author cites a case, occurring in India, of an officer who had had no outside communication except by letter for months. The exciting cause was traced to a brother at home who had returned from a school closed on account of an epidemic of scarlet fever. He had written a letter to his brother in India on paper which had not been at the school, and the writer himself did not contract the disease subsequently. The case is recorded merely to show the remarkably infectious nature of the disease.

Aetiology of Lupus Vulgaris. MAX KRÜGER, *München. Med. Wehnschr.*, May 31, 1910, lvii, No. 22, p. 1165.

While all investigators agree that the tubercle bacillus is not found in every case of lupus, yet lupus vulgaris in the skin presents histologically characteristic tuberculous changes. H. Much discovered that there is a virulent form of the tuberculosis virus not visible as the Ziehl rod and the author questions—Is the Much's granular form constantly and numerously present in lupus? For the purpose of demonstrating this he uses the antiformin of Uhlenhuth, which dissolves all bacteria and tissue except the tuberculosis virus.

His method is as follows: A piece of lupus tissue about the size of a bean was cut into small pieces with sterile scissors and ground to a pulp in a sterile mortar. This pulp was put into a 10 per cent. antiformin solution and kept in the incubator for 8 to 24 hours. After everything was dissolved it was centrifugalized for 1 to 2 hours, and about $\frac{1}{5}$ volume of alcohol added to several tubes. The sediment was placed upon sterile slides and fixed in a flame when dry. Stain:

1. Two minutes in fresh methyl-violet solution, allowing to boil frequently over a flame, 5cc. saturated alcoholic solution of methyl-violet plus 45 cc. of 2 per cent phenol solution, filtered several times.
2. Two minutes in lugol solution.
3. One minute in 5 per cent. nitric acid.
4. Ten seconds in 3 per cent. hydrochloric acid.
5. Acetone-alcohol (ana) until decolorized. The acetone-alcohol must be changed frequently.
6. Wash in water.
7. Short counter-stain (about 2-5 seconds) in 1 per cent. safranin solution.
8. Wash in water.
9. Dry—cedar oil.

Fresh solutions of methyl-violet were always used and positive controls from guinea pigs inoculated with tuberculosis germs were used for comparison. The granular rods fade soon, and the specimen must be examined as soon as possible.

He believes that *lupus vulgaris* is a true tuberculosis because of the regular appearance of the exciter, the possibility of growing the same, and the positive results of animal experiments. The author also states that by the antiformin method the exciter is demonstrable in every case, but that it appears more frequently as the Much granular form than as the Ziehl rod.

PHYSICAL THERAPEUTICS.

By FRED WISE, M. D., New York.

Fulguration in Inoperable Carcinoma. HANS SCHULZ, *München. med. Wochenschr.*, 1909, Ivi, No. 37.

In this article the author deals a severe blow to the fulguration method of treating inoperable [more properly speaking, irremovable] cancer. He lays especial stress on the circumstance that in all the cases which he treated, the technique described and recommended by de Keating-Hart was scrupulously followed in every detail; his reason for emphasizing this being, that the poor results reported by various surgeons were, according to de Keating-Hart, due to improper and faulty technique, or to modifications of his method. Parenthetically, Schulz states that the fulguration method was first used by Rivière, and that de Keating-Hart's sole modification consisted in the employment of a carbon dioxide cooling device.

In applying fulguration to his cases, Schulz used the latest and most efficient apparatus procurable. He employed a current of very high frequency and electro-motive force—the latter between 250,000 and 300,000 volts—in connection with the carbon dioxide cooling apparatus. He described the various steps of the treatment as follows:

Anæsthesia was started with ether, followed by choroform, during the fulguration itself, to avoid the possible ignition of the ether. The patient was placed upon a common metallic operating table, which was well "earthed." The fulguration spark was then applied for a few minutes to the diseased area, after which all accessible cancerous tissue was removed as thoroughly as possible, together with a margin of apparently healthy tissue. This was folowed by rapid but thorough fulguration, the duration of which naturally depended upon the extent of diseased surfaces involved. Approximately one minute's fulguration was given to one cubic centimetre of tissue, as recommended by Lacaille. The most efficient sparks seemed to be those having a length of two to

four centimètres. The effects of the sparks manifested themselves by the whitish-yellow color assumed by the fat, and the dark-brown tint of the muscular tissue, the latter assuming a glazed appearance. The skin around the growth was treated in like manner, one-half to one centimetre around the margin of the diseased tissue. The entire treatment varied from ten minutes to three-fourths of an hour in duration.

The spark immediately controlled parenchymatous oozing of blood, but the larger blood vessels were ligated. No lasting ill-effects were noted, and no marked burns were caused, even in those cases in which the carbon dioxide could not be utilized, as in cases of cancer of the tonsil, tongue, pharynx, etc. Occasionally the spark caused the appearance of bullæ on the mucous membrane of the lips, but these healed rapidly. The effect of the spark on the nerve trunks seemed to be merely a contraction of the muscle supplied by that nerve. In one patient fulguration of the vagus nerve caused an irregularity in respiration whenever the spark struck the nerve. No thrombosis, nor change of any kind was observed on fulguration of the blood vessels. This absence of injurious effect coincides with the researches of Arnot and Lagner, who showed that even the dura and the brain were not injured by fulguration. With the exception of one case, Schulz has seen no disturbances of respiration or circulation. According to Cohn, an icterus of short duration followed the fulguration in two patients under his care. In two-thirds of the cases, a marked flow of lymph followed the treatment. According to de Keating-Hart, this lymphorrhœa causes a mechanical extrusion of the necrotic cancer cells. Schulz believes that in weakened and cachectic subjects, this great loss of lymph must be injurious; but, nevertheless, thorough drainage must be provided, in every case; otherwise, a marked rise of temperature will follow.

The author reports the following cases treated by him in detail:

CASE I. Female, forty years of age. Cancer of breast, with axillary, supra- and infraclavicular metastases. The breast tumor is attached to the chest wall. Radical operation, with careful excision of glands, preceded by 10 minutes' fulguration; at the close of the operation, 45 minutes' fulguration of wound and adjoining tissues. Marked lymphorrhœa followed, lasting 10 days. A week later the patient had developed a generalized bronchitis, followed, a month later, by an exudative pleurisy. Biopsy showed numerous metastases in the skin over the wound. The patient died 24 days after the operation, with symptoms of embolus of the lungs. Autopsy revealed metastases in the kidneys, liver and mesentery.

CASE II. Female, fifty-two years of age. Recurrent cancer of the breast. April 4, 1906, a radical operation was performed. In January, 1908, the patient presented nodules in the scar, with œdema of the arm and lymph nodes in the axilla and neck. X-ray treatment was without benefit. December 5, 1908, extirpation of the glands, followed by 10 minutes' fulguration; December 13th and 21st, 15 minutes' fulguration. "As not the slightest apparent benefit was observed, the patient was allowed to leave the hospital."

CASE III. Male, fifty-three years of age. Cancer of floor of mouth; a large

hard mass, involving floor of mouth and tongue; enlarged glands. January 12, 1909, fulguration for 5 minutes; removal of cancerous tissue with sharp curette. Fulguration again, for 10 minutes on January 23. The patient was released in a markedly cachectic condition and with rapidly growing recurrences at the borders of the wound.

CASE IV. Male, forty-two years of age. Sarcoma of epipharynx. Enlarged glands on both sides of the neck, some of them adherent. There was a walnut-sized tumor on the right tonsil, extending upward, and adherent to the surrounding tissue. Biopsy reveals a spindle-cell sarcoma. January 12, 1907, fulguration of the tumor for 5 minutes, followed by the removal of the tumor mass, and by 10 minutes' fulguration. Fourteen days later a biopsy showed a recurrence of the sarcoma.

CASE V. Male, fifty-three years of age. Recurrent cancer of jaw. On December 12, 1907, and May 13, 1908, operations for cancer of the upper jaw were performed. On May 13th, resection of upper jaw was resorted to. The growth was found to extend to the base of the skull. On January 12, 1909, a recurrence was noted. This was ablated and fulgurated for 25 minutes. February 25, 1909, another recurrence was noted. This was extirpated and followed by 10 minutes' fulguration. The patient was released after 14 days, as the treatment was devoid of results.

CASE VI. Male, forty-one years of age. Recurrent cancer of jaw. December 4, 1908, resection of upper jaw, for cancer of antrum of Highmore. January 4, 1909, recurrence within cavity of mouth. January 8, 1909, fulguration for 5 minutes, removal of cancerous tissue, followed by 15 minutes' fulguration. January 12, 1909, granulations, on biopsy, showed recurrence. Extirpation, followed by 20 minutes' fulguration. April 6, 1909, 20 minutes' fulguration. April 14, 1909, 15 minutes' fulguration. April 26, 1909, biopsy again shows recurrence. About one month later, the patient presented himself with extensive recurrences over the entire cavity of the mouth.

CASE VII. Female, seventy-five years of age. Cancer of face. Tumor involving entire nose, extending to left cheek and forehead, and the skin, up to the inner canthi, on both sides. Small tumor masses present on both cheeks. May 4, 1909, fulguration, 5 minutes. Extirpation of affected tissues, as far as possible. Tumor is found to extend to the naso-pharynx, and involves all the surrounding tissues. Fulguration for 5 minutes. After 14 days biopsy showed recurrence, although the wound presented healthy-looking granulations.

CASE VIII. Male, thirty years of age. Lupus-carcinoma of face. Tumor over region of left side of chin, about size of a silver dollar, of solid consistence and adherent to underlying tissue. Biopsy reveals squamous-celled epithelioma. Sub-maxillary glands enlarged. May 10, 1909, extirpation of tumor and glands, followed by 20 minutes' fulguration. The healing of the wound was very rapid. July 1, 1909, apparently cured. July 10, 1909, recurrence at upper edge of scar, and the surrounding tissues infiltrated.

CASE IX. Male, fifty-two years of age. Cancer of tonsil. October 3, 1908, operation consisting of ligation of external carotid, extirpation of glands in neck, and tumor of tonsil. December 31, 1908, apparently cured, and released from hospital. No swelling nor pain and no sign of recurrence. February 14, 1909, recurrence beneath angle of jaw. No recurrence apparent in tonsil. X-ray treatments were then given. February 25, 1909, progressive growth of right submaxillary glands, with ulceration of neck. March 1, 1909, extirpation of all cancerous tissue, followed by 38 minutes' fulguration. April 6, 1909, recurrence. April 8, 1909, curetting, followed by 15 minutes' fulguration. April 14, 1909, 30 minutes' fulguration. May 13, 1909, healthy granulations, with healing of

wound. May 25, 1909, biopsy shows recurrence. Wide excision of affected areas, followed by 30 minutes' fulguration. June 10, 1909, recurrence.

CASE X. Male, forty-five years of age. Recurrent cancer of tongue. December 15, 1908, ligation of both lingual arteries, and extirpation of primary tumor, followed by apparent recovery. April 29, 1909, recurrence involving hard palate, part of pharynx, and parts of upper and lower jaws; a small gland at angle of left jaw. April 30, 1909, short fulguration, followed by extirpation of affected tissues. Considerable bleeding, controlled after 25 minutes' fulguration. May 5, 1909, rapid, healthy, granulations. May 20, 1909, wound thoroughly healed. Biopsy reveals a recurrence at posterior edge of wound.

CASE XI. Male, forty-five years of age. Recurrent cancer of lower lip. March 14, 1908, excision of tumor and glands of neck. December 18, 1908, recurrence. Removal of tumor and part of lower jaw. April 21, 1908, recurrence. Short fulguration, followed by extirpation of diseased areas and 30 minutes' fulguration. April 24, 1909, extensive recurrence inside of the cheek.

CASE XII. Male, sixty-two years of age. Cancer of cheek and lobe of ear. After months of X-ray treatment, a dollar-sized patch of unhealed tissue remained. June, 1909, short fulguration, followed by curettage and 15 minutes' fulguration. July 15, 1909, wound almost completely healed. Biopsy shows no recurrence. The lapse of time is too short to decide regarding permanency of cure.

CASE XIII. Female, twenty years of age. Melanoma of right thigh. Six years ago a pigeon's-egg-sized tumor was removed. This was soon followed by nodules on the right thigh, and in the groin, and a large metastatic growth on the anterior surface of the thigh. This mass shows extensive ulceration and discharges large quantities of foul-smelling secretions. January 30, 1909, fulguration of this mass for 30 minutes, the object being to diminish the foul secretions and to lessen their odor. February 6, 1909, patient released, without showing the slightest benefit from the treatment.

These 13 patients were given fulguration on 22 occasions, 7 of them receiving one treatment, and 6, more than one. With the exception of the case of cancer of the skin (in which case not enough time has elapsed to warrant a decision as to a permanent cure), not one case was permanently benefited by the fulgurations. Not even the pains in cases 3, 5, 6 and 8, nor the foul discharge in case 13 seemed to be relieved. In the early stages, the healthy granulations and rapid healing seemed hopeful, but shortly after, recurrences occurred in all the cases. Especially disappointing was the case of lupus carcinoma, in which there appears to have resulted a thorough cure, with a good cosmetic result.

Schulz does not agree with de Keating-Hart's statement to the effect that, when recurrences take place after fulguration, they are slow, insidious, and need not occasion alarm; nor did he observe the diminution in size of the affected glands to which de Keating-Hart calls attention. On the contrary, the author states that in cases 3 and 5 the fulguration caused a rapid and progressive augmentation of the growths.

In short, Schulz has no faith in the fulguration treatment of cancer. According to Freund and other observers, the penetrating power of the spark is too meagre to be of any marked benefit. On the healthy skin, the spark seems to penetrate only to the middle of the corium,

while an open wound admits of a penetration of about one centimeter. In the author's opinion, de Keating-Hart and Czerny are mistaken in their belief that the spark has a so-called selective action on cancer-cells, and neither of them has brought forward any arguments in favor of such a theory. But even if such a selective action were admitted, it is impossible for the spark to impinge upon all the affected tissues in any given operative field, so that the actual destruction of all abnormal tissues or areas is, in Schulz's opinion, out of the question.

In conclusion, Schulz states that possibly with improved apparatus and technique, or with the use of Forest's needle, better results may be obtained in the future, although even then he is skeptical about the future of fulguration as an adjunct to the treatment of inoperable malignant growths.

Radium: A Further Report of Some Results by Its Use F. G. HODGSON,
Jour. Rec. Med., 1910, xii, No. 6.

Hodgson, after citing numerous cases of nævi, verrucæ, cutaneous tuberculosis, epitheliomata, etc., taken from the literature, gives his personal experience with the use of radium in such conditions.

He reports in detail three cases of extensive epithelioma of the face (rodent-ulcer type), which on account of the situation and the involvement of the deeper tissues were inoperable. They had also resisted treatment by caustics, X-rays, etc. He employs a glass container holding 10 mg. of pure radium bromide of 1,500,000 units strength. Ten treatments in a month, ranging from forty minutes to one hour each, were given. The first case healed as a result of ten months' treatment. The second and third cases only required one month's treatment. In the third case no improvement was noted until after an active reaction had been produced.

He also reports three cases of beginning epitheliomata which healed after one or two treatments. One case of inoperable sarcoma of the orbit failed to respond to the application, although the pain was much lessened. Twelve cases of ordinary warts were cured by one treatment. Three cases of painful callus on the soles of the feet were also cured by one application. Two cases of keloid were also treated effectually.

The chief advantages claimed for the employment of radium are: (1), ease of application; (2), painlessness of treatment; (3), absence of scarring; (4), no sacrifice of healthy tissue; (5), diminution of pain and secretion in ulcerated surfaces; (6), in certain conditions better results can be obtained by its use than by any other known remedy. The chief disadvantage is the high original cost of the radium.

OBITUARY.

DR. JAMES NEVINS HYDE.

DR. JAMES NEVINS HYDE, Professor of Skin and Genito-Urinary and Venereal Diseases, Rush Medical College, Chicago, died at Proute Neck, Maine, September 6, 1910, aged seventy. He was born in Connecticut, and graduated at Yale College. He received his degree in medicine from the University of Pennsylvania in 1869.

Doctor Hyde was one of the leading dermatologists of this country, and was known the world over as the author of admirable treatises on dermatology and syphilis and as a prolific writer of valuable papers on these subjects. He was an enthusiastic and successful teacher, and a practitioner of long and extensive experience—an untiring worker and keen observer. He was a constant attendant at meetings of dermatological societies and congresses, a highly valued contributor to their programs, and a spirited debater. He was one of the early members of the American Dermatological Association, and one of the most faithful, a zealous collector and reporter of statistics, and always ready to give time and thought in furtherance of its interests. He will be greatly missed by his colleagues, there and elsewhere. His personality was engaging, and he was most genial and kind to all his associates. We all remember what a striking success he made as toastmaster at the banquet of the last meeting of the International Congress in New York. His death is a great loss to Dermatology and his many friends.

J. C. W.

NOTICES.

SEVENTH INTERNATIONAL CONGRESS OF DERMATOLOGY.

The Seventh International Congress of Dermatology and Syphilology will be held in Rome, September 25 to 29, 1911, at the Castle S. Angelo.

All interested in Dermatology and Syphilology are cordially invited by the President, Prof. Tommaso De Amicis, and the Secretary-General, Dr. Gaetano Ciarroechi, to join the Congress and contribute to its scientific work. This may be done by filling in the membership blank which accompanies the official notice of the Congress and forwarding it to the Secretary-General, Dr. Gaetano Ciarrocchi, 5 Piazza Grazioli, Rome, Italy, or to the Secretary for the United States, Dr. A. Ravagli, 5 Garfield Place, Cincinnati, Ohio. The membership fee, L. 25 (\$5.00) should be sent to Dr. Luigi Silvestri, 13 Via Della Pace, Rome.

All titles of papers should be forwarded to the Secretary-General and a brief abstract typewritten, not later than April 30, 1911.

CHANGE OF PUBLISHERS.

We desire to advise our readers that beginning with the January, 1911, issue, *THE JOURNAL* will be published by Rebman Company, 1123 Broadway, New York City, (telephone, 5135 Madison Square). On and after January 1, 1911, all business communications and subscriptions should be addressed to the new publishers.

FESTSCHRIFT IN HONOR OF PROFESSOR P. G. UNNA.

To commemorate his sixtieth birthday, on September 8, 1910, the friends and colleagues of Professor P. G. Unna, of Hamburg, in collaboration with the Monatshefte für praktische Dermatologie, have presented him with a "Festschrift" in two volumes, containing over one hundred articles by prominent dermatologists, pathologists, bacteriologists, etc., from nearly every country in the world. Among the list of collaborators we notice five American colleagues: Sigmund Pollitzer, Jay Frank Schamberg, Richard L. Sutton, Marcus Hasse and Udo J. Wile. There has been some delay in the preparation of the volumes, but they will appear very shortly.

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BACTERIOTHERAPY IN CERTAIN DISEASES OF THE SKIN.*

By M. F. ENGMAN, M. D., St. Louis, Mo.

IT is very difficult, in the short space of time allotted, to do justice to such an extensive subject as the one under discussion.

We have covered, in our investigations, a large field and have treated a great variety of diseases of the skin by this method, therefore in our report we will be obliged to omit an introductory review of the literature and the theories pertaining to the subject. This report embraces the study of about three hundred patients treated with bacterial vaccines, collected from the records of the St. Louis Skin and Cancer Hospital, and the private practices of myself and of Dr. Mook.

The investigations have been of a purely clinical and practical character. In nearly every case, cultures were taken as aseptically as possible from the disease foci, the earliest lesions being selected; and in all cases smears were carefully examined.

Stock vaccines have in all instances been at first tried, as we felt it to be to the advantage of this system of therapy if it could be practically demonstrated that the stock suspensions were reliable and efficient, thus placing vaccine therapy within easy reach of those physicians not having laboratory facilities.

In 1907 and 1908, a large part of the work was controlled by the opsonic index, done under the supervision of Dr. Guthrie McConnell, pathologist to the St. Louis Skin and Cancer Hospital, and according to the method of Wright and Douglas. Dr. McConnell, after an extended experience of some months with a large number and variety of cases, determined that the "clinical effect upon the patient is the gauge of the dose." (*St. Louis Med. Rev.*, Nov.,

*Read before the 34th Annual Meeting of the American Dermatological Association, Washington, D. C., May 3-5, 1910.

1907). Therefore our interval of dose and dosage has, in the large majority of instances, been controlled by the clinical symptoms alone.

All of our suspensions have been prepared by the Wright method—an attempt being made to approximate the number of organisms per cubic centimetre. We might state here, that generally the dose recommended by most investigators, was found to be too large, consequently on this account, our early experiments were so unfavorable, that for some months vaccine therapy was almost abandoned. Experience is after all the best teacher, and it was only after the observation of a large number of cases, that we felt encouraged in its use.

The knowledge of the bacteriology of skin diseases is so limited that one's investigations with bacterins is likewise limited. The various diseases caused by fungi and tubercle bacilli infecting the skin adds much to our list of known parasitic skin diseases, but in St. Louis we are fortunately comparatively free from such infections, and when they do occur, are so easily cured that vaccine therapy is unnecessary. Therefore our investigations with bacterial suspensions necessarily fall into two groups: (a) The staphylococcus group of organisms; (b) The acne bacillus.

STAPHYLOCOCCUS—The relation of staphylococci to skin diseases is a fertile but difficult field for investigation. None fully realizes its importance, not only as a factor in changing objective symptoms by secondary infection, but the varied phases of its primary chemotactic influence. Nothing is more interesting than the study of these cocci in the skin, their morphology, chemical qualities of their toxins, and the multiplicity and variety of lesions caused by them; or, their behavior under remedial agents. It is curious to note the great variety of lesions produced on the skin by these cocci, which, upon cultural identification, will at one time prove to be of the aureus type, and at another, from a similar lesion, of the albus type. We have for many years believed that the morphological differences in this group of cocci meant nothing in their chemotactic qualities, that the former were largely due to incidents of growth and environment, and that a coccus from a boil may present no morphological differences from those from a bullous impetigo or pustular eczema.

Working on this assumption, we have, in experimenting with stock vaccines, purposely paid no attention to the variety of coccus

grown from a case, and have used suspensions of the staphylococcus albus for the treatment of cases from which was grown the staphylococcus aureus with as brilliant results as if an autogenous vaccine had been used. This we have done time and time again. Polyvalent staphylococccic vaccines have in like manner been used with equally as good results. It is our impression, however, that the suspensions of the white coccus for general use is more efficacious. The staphylococcus, on account of its constant occupancy of the normal skin, is an agent of great consideration in dermo-therapy, as it enters as a secondary factor in almost all diseases of the skin.

Local antiseptics in the treatment of staphylococcus infections have been, we might say, in a general sense disappointing, or at least unreliable. It is usually very easy to cure an impetigo contagiosa, which is probably due in most instances to this coccus, but exceedingly difficult to counteract or change their influence in certain types of folliculitis and eczema, for instance, the difference in their action to local therapy, no doubt, depends upon the depth of the infection and the penetration of the staphylococci which is again dependent upon the effect of the staphylotoxin upon the epithelial cells. We see objectively a stream of lymph bubbling forth through the epidermis in certain diseases, due to the effect of this organism, yet local antiseptic applications are disappointing in their effects. Such lymph may flow for days without any seeming deleterious effects upon the coccus, and strange to say, few cocci can be seen in histological sections, yet they are there and the disease can be autoinoculated from one part to another, as all of us have seen. The lymph in these cases does not contain sufficient defensive elements to counteract the poisons generated by the coccus. In follicular infections, the sheath of the follicle, as Whitfield says, acts, no doubt, as a protection to further invasion; and, also acts as a barrier to defensive immunizing processes occurring in the body generally.

In vaccine therapy, we have at last, a remarkably beneficial agent in combating all deeper and more virulent staphylococccic infections of the skin.

In the instances above cited, when a serotactic coecus splits up the epidermis with its staphylotoxin, and causes a bountiful flow of lymph, if that lymph be rich in immunizing bodies, a rapid change in the objective symptoms will be noticed. In follicular staphylococccic infections of all kinds, we have in Wright's method a quick and re-

liable specific. In many instances, within forty-eight hours a marked change can be observed.

Treatment by bacterial suspensions has offered us, in many instances, convincing proof of the staphylococcal origin of several diseases of the skin, whose aetiology has heretofore been in doubt. When, upon the injection of a staphylococcal vaccine, a certain pathological process ceases and rapidly undergoes involution, one is justified, if a sufficient number of instances are observed, to draw the conclusion that such a process is due to that organism. Such has been our experience in several varieties of skin affections. It must be borne in mind that the staphylococcus presents as many varieties in its chemical characters as it does in its cultural and physical, *i. e.:* that it may present white, yellow, or golden cultures, and attract serum, leucocytes or both from the vessels; therefore, the objective symptoms on the skin in a staphylogenetic disease will depend upon the chemical action of the toxin. Also, in the study of this coccus in relation to the aetiology of a certain disease by means of bacterial suspensions, the immunizing dose must be gauged according to the position of the coccus in the skin, and its chemotactic qualities. It has been our empirical experience in staphylogenetic catarrhal processes that the more superficial the coccus, the greater the flow of lymph and the larger the extent of surface involved, the smaller and more guarded should be the dose. Too large a dose will increase the process by a prolonged negative phase and a relapse can be caused by the same means. This we have purposely verified several times.

In studying skin diseases covering a large surface and constantly infested by staphylococci, it is curious to observe how little constitutional effect supervenes. Such a condition may exist for months without the patient showing toxic symptoms, therefore, there must be in such cases a minimum amount of absorption.

The deeper infections produce graver symptoms and oftener undergo involution. Immunity to staphylococci is, in most instances, short lived. Many of our cases, especially the more superficial diseases, relapse, which may be due to the lack of sufficient systematic absorption to give a long immunity. In several cases immunization failed completely; in two of these, the tissues rebelled against the vaccines by the formation of sterile abscesses at the site of the injections.

The relation of staphylococci to skin diseases is a fascinating subject, but we will hurry on to the purely practical—the discussion of the cases treated.

BACTERIOTHERAPY IN DISEASES OF SKIN.

STAPHYLOCOCCUS SUSPENSIONS were employed in the following diseases:

1.	Dermatitis and eczema of various types	32 cases
2.	Sycosis	12 "
3.	Impetigo contagiosa	13 "
4.	Furunculosis	27 "
5.	Folliculitis	26 "
6.	Ecthyma	6 "
7.	Pityriasis rosea	4 "
8.	Pemphigus	3 "
9.	Erysipelas	3 "
10.	Dermatitis exfoliativa	2 "
11.	Acne rosacea	7 "
12.	Acne rubra seborrhœica	4 "
13.	Psoriasis	2 "
14.	Follicular hyperkeratosis	5 "
15.	Dermatitis herpetiformis	3 "
16.	Pustular syphilide	2 "
17.	Acne varioliformis	7 "

DERMATITIS AND ECZEMA OF VARIOUS TYPES.

In vesicular eczema of the acute, subacute or chronic form, vaccines have proved of no value with us. In thickened patches of chronic eczema associated with secondary infection, the latter has been easily cured by stock staphylococcal suspensions. In all true eczemas, associated with pus formation, the vaccines have proved of value only in affecting the pustular condition, but not the basic catarrhal process.

In chronic seborrhœic eczema or dermatitis, staphylococcal vaccine is of no avail, but in the acute types, where the process spreads from the scalp to the forehead, face, neck, and chest, its action is quite interesting and curious, and warrants further study. We had two patients, one a young woman, the other a man of sixty, both affected with a severe attack of acute seborrhœic dermatitis. The young woman had a diffuse follicular type with redness and œdema; the man, a diffuse œdematos type. In both cases, the eyes were nearly closed when they received the suspensions. The following day the whole course of the process seemed to be checked; the œdema and inflammation was decidedly ameliorated. The man was only seen once; the young woman was in the hospital two weeks.

A relapse would occur in the next forty-eight hours after injection and various intervals of dose and size of dose were resorted to to sustain her immunity without any further success, therefore the usual local treatment was employed. The above cases illustrate our experience with this form of eczema.

Chronic seborrhœic eczema, psoriasisiform seborrhœic eczema and its close relation—psoriasis—have been injected with all forms of this group of organisms without any appreciable effect.

Acute orbicular eczema, four cases, all similar in type to Corlett's winter eruption, were treated with autogenous and stock staphylococcal vaccines, without result. The type looks favorable as the disease comes as flat papules which coalesce and form a circular wet patch, parasitic in its sharp circumscribed outlines. The results were disappointing.

The so-called scrofulous eczema of Crocker or tuberculous eczema of Unna, has always an appreciable staphylococcal element. This form occurs in children of the so-called lymphatic type, coincident with adenoids, enlarged lymphatic glands, and often associated with discharging ears and nostrils. The skin eruption is most frequently in the form of a pustular eczema. The report includes two of these cases. The patients are now in the hospital. One has been under hospital care for eighteen months, during which time, she has received treatment with autogenetic and stock vaccines in every variety of dose and interval without effect upon the skin symptoms.*

It seems impossible to obtain for these little patients any degree of immunity by any method except sun, food and air. The staphylococcus is, no doubt, an active agent in the condition, but the defensive processes of the patients are either too weak to react or the technique in our attempts to stimulate and form them was at fault.

There is a form of dermatitis due to the staphylococcus, the symptoms of which occur in various forms, all of them are, however, characteristic of the infection. In 1902, I called attention to this type of dermatitis in a communication entitled, "An Infectious Form of an Eczematoid Dermatitis." The conclusions were based upon the study of a staphylococcal epidemic which occurred in a foundling home, together with a large number of such cases in clinic practice during an exceedingly hot summer. The dis-

* Local treatment in all our cases was discontinued when the patient received bacterins, as observations made upon bacteriotherapy while the patient is receiving internal treatment or local applications, is necessarily unreliable.

ease was found to be infectious. The conclusions given in the aforesaid communication were as follows:

"Staphylogenetic (?) eczematoid dermatitis is characterized by the following points, many of them differentiating it from eczema in the more limited acceptation of the term:

1. The initial or earliest lesion may be a vesicle, pustule, erythematous, scaly or crusted point or plaque.

2. The vesicles are not so closely placed and are larger than those seen in an acute symmetrical vesicular eczema.

3. There is no symmetry in the arrangement of the lesions, except when thus accidentally inoculated.

4. It occurs in patches, usually not involving a large area of surface in a single patch. When the disease begins as vesicles they soon break to form a scaly patch which extends in the usual manner. New foci may begin as a cluster of vesicles.

5. The patches are circumscribed with sharply defined borders. The epidermis at the periphery is usually undermined, split up, detached or raised; the two latter events being caused by perceptible or imperceptible serous or seropurulent fluid, which may, if it contains much fibrinous material, instantly form a thin ridge-like crust about the periphery, while if in larger amounts and more fluid, drops of it can be pressed out from under the raised epidermis.

6. The disease increases by peripheral extension of the patches and the formation of new ones by autoinoculation.

7. The exposed parts are the most frequently affected.

8. There is no attempt at central involution.

9. There is a minimum amount of itching.

10. The nearest lymphatic glands are often enlarged.

11. The initial and earliest vesicle, pustule, scaly or crusted spot contains the yellow or white staphylococcus in pure culture, as well as the surface and crusts of the later patches.

12. Experimental autoinoculation can usually be successfully performed, but the lesion thus produced begins as an erythematous patch which soon weeps and crusts, and not as vesicles.

13. A history of trauma, infection or association with suppurative conditions is characteristic of the affection.

14. The association with suppurative conditions; history of apparent infection and autoinfection; the exciting factor of traumatism and infection, with the bacteriologic findings enumerated, all indicate and confirm our belief in the staphylogenetic origin of this dermatitis."

When vaccine therapy was introduced, these cases were therefore treated by this method with great eagerness. The results have been all that could be desired, and confirm the former opinion of their staphylogenetic origin.

The two most brilliant results occurred in two of the most severe cases seen in many years. In these, the disease was widely distributed, as a patchy, scaly, dermatitis, looking very much like types of so-called dermatitis exfoliativa. (Figs. 1, 2, 3 and 4). Both cases were in the hospital at the same time. One case received his autoinoculations from an old leg ulcer, the other from an irritating old truss, which produced the first patch. Both cases cleared up rapidly under stock staphylococcic suspensions, without the employment of any other treatment. To us this is a remarkable therapeutic triumph.

In these catarrhal conditions, the initial dose should be small, from 50 to 100 million, as the clinical symptoms react quickly to a proper or improper dose. Too large a dose immediately (within twelve hours) precipitates a relapse. Case 5 entered the hospital on the 8th of February and received 200 million and on the 14th, the swelling had almost entirely left the face; on February 21st, the patient was entirely well. During this time he had had three injections of 200 million each of stock vaccine. He left the hospital but returned on the 12th of March in as bad a condition as when first seen. He again left, cured, on March 26th, and has remained well so far. The causative ulcer was syphilitic and was cured by specific treatment. Case 6 was a more difficult one to handle therapeutically. He was a more delicate man and the organism was more actively serotactic. Shreds of slightly loosened epidermis could be peeled off, rendering the case similar in some of its characters to a pemphigus foliaceus leaving the denuded epidermis only slightly damp and sticky. Our early attempts to immunize him rendered the condition worse. However, by persistent effort and study, the proper dose and interval was discovered, which resulted in complete success. Fifty million at six days interval seemed to be his standard. Two hundred million would precipitate a relapse, which was twice produced intentionally. A relapse was also caused by allowing him to wear his dirty truss for a week, the truss being in the first place the inoculating factor.

Histological sections of the skin of these cases show few cocci, but they occur in clumps here and there in the stratum corneum. A

stream of serum is attracted by them, as can be demonstrated by the signs of oedema in the sections. This oedema loosens and lifts the outermost layers of the horny layer in sheets, which is confirmed by the clinical symptoms. The histological picture is interesting and instructive, and when considered with the bacteriological and therapeutic pictures, curiously fits in with the theories of Benda, Bockhart and Gerlach, relative to types of eczema. A not infrequent form of this infection begins upon the finger or hand, and spreads upward in a more or less serpiginous manner, similar to Crocker's description of dermatitis repens, which is, in all probability, the same affection. It is curious that staphylogenetic eczematoid dermatitis is very frequently associated with conjunctivitis which often heralds a relapse.

SYCOSIS. The more or less acute forms of sycosis, are quite amenable to stock vaccines, but chronic cases in every instance treated by us, require autogenous vaccines; in the latter group we established only a temporary immunity in three cases. In one of these, X-ray treatment did not effect a cure.

IMPETIGO CONTAGIOSA. Without local treatment, impetigo contagiosa was seemingly not affected.

FURUNCULOSIS. Some cases of furunculosis clear up satisfactorily under stock vaccines, while others fail to respond, except in a tentative way to either stock or autogenous suspensions. Chronic furunculosis of the nape of the neck is particularly troublesome and disappointing. From our studies, we cannot agree with Sabouraud in his conclusions that these cases are analogous to acne. Relapse is the rule, probably from reinfection in barber shops. In one case we traced the source of relapse to an infected collar of an old hunting jacket. In one of our cases of chronic furunculosis of the chin, neck and face, a sterile abscess was formed at the site of injection of both stock and autogenous vaccines, with violent reaction in and about the furuncular lesions. Four injections were given, varying from 50 to 200 million cocci, each producing a like result. It is easier to obtain immunity in a furunculosis when the lesions are more or less generally distributed. In one case the lesions disappeared in a week after an injection of 100 million cocci from a stock suspension of the white coccus. Furunculosis associated with eczema is easily cured by vaccines. Furunculosis of the buttocks frequently relapse. Search for the sources of reinfection in furunculosis is frequently profitable and interesting.

FOLLICULITIS. All forms of disseminated or acute pustular folliculitis due to the staphylococcus, is quickly amenable to vaccines. In warm climates, a troublesome, widely disseminated folliculitis occurs with prickly heat, as a result of scratching, as shown in Figure 5; similar clinical types occur by autoinfection from suppurating foci; in others, the source of infection may be unknown. Where many follicles are involved, as in the types cited, vaccines have a rapid beneficial effect, and the immunity is sustained longer than in any other staphylococcal affection observed by us. Such an immunity is very beneficial in those individuals who are obliged to wear surgical and orthopaedic appliances, under which folliculitis is troublesome and frequent.

Various forms of hyperkeratosis of the follicles, lichen pilaris, lichen spinulosus, etc., were treated with staphylococcal vaccines without success. Hairs plucked from the earliest lesions in six cases of this class, produced upon culture media a white staphylococcus, which was, however, to be expected. Autogenous vaccines, made from them, were useless. One case of pustular folliculitis about the vulva, associated with diabetes, was promptly relieved by stock suspension.

ECTHYMA of staphylococcal origin, the only organism found in every case examined by us, replied quickly to vaccines, either stock or autogenous. Relapse upon the legs is frequent, as the general condition of the patient is usually such that scratching causes reinfection. The skin of ecthymatous patients is generally pruritic, either from lack of cardiac tone or some other run-down condition.

PITYRIASIS ROSEA. Four typical cases of pityriasis rosea were injected, all with stock and two with autogenous suspensions, obtained from a growth from the scales. The results were negative.

PEMPHIGUS. Two cases of pemphigus vulgaris, and one of the so-called septic type were treated. The bacillus pyocyaneus was not found in any of the cases, nothing but staphylococci, and in one case streptococci, once. Vaccines proved of no avail.

The septic case was in the hospital only three weeks when he died. His condition on entering was hopeless. One of the pemphigus vulgaris patients is yet in the hospital; the other was for two years under observation before death.

DERMATITIS HERPETIFORMIS. Staphylococci were the only or-

ganisms found in dermatitis herpetiformis, vaccines from which were useless.

ERYSIPelas. Only three cases were investigated. Autogenous streptococcic suspension in one case seemed beneficial.

ACNE ROSACEA. Furuncular lesions accompanying acne rosacea reply to staphylococcus suspensions. In each of the seven cases treated by this method, a perfect result was obtained. Two of the cases were steady drinkers in whom the immunity was quite lasting.

ACNE RUBRA SEBORRHœICA. A disease first described and named by Pitrini, later described by Pringle as "A Rare Seborrhœid," and in 1907 by Engman and Mook. The disease consists of an acne-like follicular papule, thickly scattered over the face. It quickly subsides under sulphur. Neither the acne bacillus nor staphylococcic vaccines affected it.

PSORIASIS. Psoriasis was not affected by staphylococcus vaccines, autogenous or stock, and only these organisms were cultivated from the scales. Lately we have taken the scales of three patients, ground them together, and added a definite quantity of powdered scales to glycerine and normal salt solution. After rendering the mixture sterile, a definite quantity of it is used for injection. It is, as yet, too early to report results.

PUSTULAR SYPHILIS. The early papulo-pustular and pustular syphilides are not affected by staphylococcic suspensions.

DERMATITIS EXFOLIATIVA. The two cases treated by vaccines were of rather long standing. Both were of the greasy, seborrhœic type. Staphylococcic suspensions produced no result. In one case, acne vaccines were used with no result.

ACNE VARIOLIFORMIS. We place acne varioliformis with the staphylococcus group, as vaccines made from that organism proved a specific, a wonderful specific, in the seven cases included in this report.

The first case treated was in February, 1908. The lesions were on the scalp, face and chest. They were typical of the disease in every particular, also the scars over these regions. The action of the vaccine in this affection is rapid and continuous and lasting. This specific result seems to confirm the theory of Sabouraud but particularly that of Fordyce; namely, that the disease is of staphylococcic origin. All the cases were private patients, therefore a photograph was not obtainable. But all were typical of the disease.

ACNE BACILLUS SUSPENSIONS. In 1893, while working with Unna, I was first introduced to the study of acne by laboratory methods. At that time, Prof. Unna was preparing material for his wonderful book on the pathology of skin diseases, and gave me the comedone and acne as an "Arbeit." In pursuing the work a very small bacillus was found in the comedone together with the bottle bacillus and several forms of cocci. In the acne lesion itself, the small bacillus predominated, therefore, it was believed by Unna and his laboratory assistants, Hodara and myself, to be the cause of the disease. This small bacillus was grown by me at that time, also the bottle bacillus; but only poorly nourished plate cultures could be obtained; no subcultures. On leaving Hamburg, all my preparations were turned over to Monahemd Hodara, who gives a splendid description of this bacillus in his first article,¹ and mentions verbal communications with Unna and myself about these bacilli.

Sabouraud,² in 1894, published his first communication upon his microbacillus of seborrhœa, in which article he states that Unna, Engman and Hodara did not obtain pure cultures or subcultures of this bacillus.

In 1899, Gilchrist reported finding a bacillus in pure culture from acne vulgaris lesions, and stated that he believed this organism to be the cause of the disease.

In 1903, Gilchrist again asserted this belief.

In 1902, I first successfully cultivated this organism in pure culture, but on account of its delicate cultural characteristics lost it. Success again crowned my efforts in 1904, when they were again lost. In 1908, another lot of favorable media produced vigorous cultures which I took to Johns Hopkins to show to Prof. Welch and Gilchrist for comparison with the latter's bacillus. Both gentlemen at once declared on comparing the Gilchrist organism and mine, that they were identical. The bacillus with which I have lately worked is identical with that discovered and first grown by Unna and myself in the former's laboratory, and in all probability, with Sabouraud's.

It is strange that no very comprehensive communication appeared on this subject from 1903 until Fleming's excellent work in 1909. His was the first convincing communication on the use of acne bacillus vaccine.

¹ *Jour. Mal. de cut. et de syph.*, 1894, vi, 516.

² *Ann. de l'Inst. Pasteur*, 1894, p. 143.

The acne bacillus is a very sensitive organism to culture media and temperature, and is so closely associated with the skin cocci that a pure culture demands great care and delicate technique. It is a slow growing organism, at best, and refuses to grow, for me, in subcultures. It is fatal to rabbits, and can be recovered post-mortem from them. My experience with it exactly corresponds with that of Gilchrist, except the agglutination tests, of which I have not performed a sufficient number to express an opinion.

This report embraces the study of 118 cases of acne vulgaris, forty of which were treated with staphylococcal suspensions and 78 with acne bacillus suspensions. Figure 6 shows the type of the disease treated and illustrates the result obtained.

Little can be said in favor of staphylococcus vaccine in the treatment of acne vulgaris. Some of the cases improve to a certain point, to remain at a standstill. It is of service in obtaining a pure culture of the acne bacillus, as it seems to render some of the lesions sterile of cocci; as frequently, after injections of staphylococcal vaccines, a culture of acne bacilli, free from coccic contamination, can be obtained. The vaccines of these cocci had been abandoned by us in the treatment of acne until we took up the acne bacillus work again early in 1909.

Our early work with acne bacillus suspensions was discouraging, so much so, that we almost lost confidence in its apparent and presumptive *etiological* value. Case after case became worse, after using it in the doses and intervals recommended by Fleming and others. But, after treating a large number of cases, a technique was developed, which, in our hands, has proven very satisfactory. In the last three months, an unusual number of acne cases have come under observation, which has enabled us to thoroughly test this treatment. Old cases, in which former efforts, with all forms of treatment, proved unsuccessful, have been called in and have been given vaccines.

In brief, the treatment of acne vulgaris with suspensions of acne bacillus has proven, in our hands, since a proper technique has been adopted, the most brilliant therapeutic agent we have yet seen in dermatology. Some of the cases reply as does the membrane in diphtheria to its antitoxin—nothing else in medicine can compare with its action in favorable cases. There is only one drawback in these very favorable cases and that is the lesions undergo such complete and rapid involution that deeper and more marked scars supervene. Nothing demonstrates Wright's negative phase better than the use of these suspensions in acne. Invariably two or more new lesions appear

within forty-eight hours after an injection. If a large dose is given, a numerous crop can be produced and the negative phase prolonged for days. By repeated large doses, a mild ease can be aggravated or converted into a severe one with large cystic lesions; and, furthermore, the positive phase in such instances is not clinically evident. Such a patient remains for some time extremely sensitive to any dosage. Such has been our experience with doses of 50 million at seven day intervals, an experience repeated several times by us. Mild cases stand a larger dose than severe ones; in the latter, continuous small doses give the best result.

From our experiments, the following technique has been developed. The initial dose is never over 3 million, and it is not given until two or three days after cultures have been taken, as manipulation of the lesions throws more immunizing bodies on the system, which, together with the vaccines, is too much and may defeat the end. I have often wondered at the prompt appearance of many new lesions after a vigorous massage of an acne skin or after opening many lesions. I have seen severe outbreaks of acne follow treatment by a masseur, which I formerly thought due to infection by the masseur, but now believe it to be due to dissemination, through lowered local immunity. After a dose of 3 to 5 million, one or two lesions will appear within forty-eight hours, generally the next day. If more than three appear during the negative phase, the dose is too large. On the third day, seventy-two hours after injection, the comedones are expressed and all lesions opened. The manipulation at this time brings the immunizing blood to the part, as it is at the height of the "tidal wave of immunity." The large cystic lesions are opened by a thin cataract knife and the pus squeezed out, and the walls of the lesion in this way rubbed together, irritating them which brings fresh immunizing lymph into the cavity. Formerly these large cystic lesions took a long time to heal, often it was necessary to wipe them out with carbolic acid and alcohol before they would cease discharging. This method dries them up within a few days. The patient is also instructed to apply hot towels to the face twice daily for five minutes so as to cause a local hyperæmia. On the fifth to the seventh day, new lesions will appear which signifies another stage of depression, and is the indication for a second dose of vaccine. Another dose of 3 to 5 million is given; in this way a cure is completed. Small doses, sufficient to cause a short negative phase seems, with us, to be the best method. After several doses,

PLATE LXIII—To Illustrate Article by DR. M. F. ENGMAN.

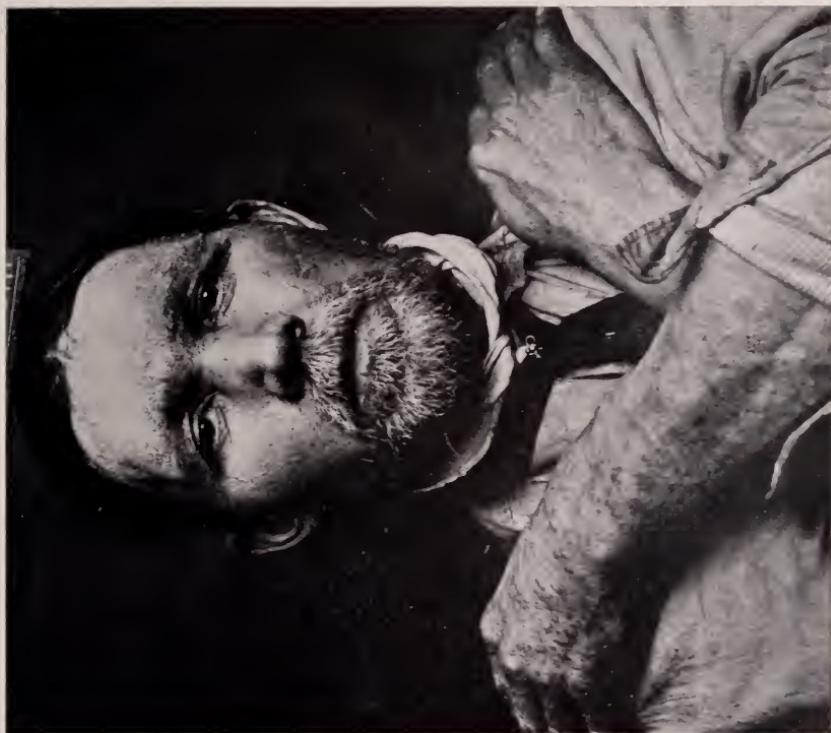


FIG. 1.
Staphylococcal dermatitis before vaccine treatment.

FIG. 2.
Staphylococcal dermatitis after vaccine treatment.



PLATE LXIV—To Illustrate Article by Dr. M. F. ENGMAN.



FIG. 3.

Staphylococcal dermatitis before vaccine treatment.



FIG. 4.

Staphylococcal dermatitis after vaccine treatment.

PLATE LXV—To Illustrate Article by DR. M. F. ENGMAN.



FIG. 5.

Folliculitis before vaccine treatment. Subsequently cured by staphylococceic suspensions.

PLATE LXVI—To Illustrate Article by DR. M. F. ENGMAN.



FIG. 6.

Acne cured by bacillus suspensions.

new lesions cease to appear. If, after a few doses, new lesions appear after the third day, a larger dose of 7 to 10 million should be given, but this is rarely necessary. Small doses at from five to seven day intervals, with methods employed to produce local hyperæmia, in the larger majority of instances, is sufficient to secure immunity. Under this technique all lesions, even the deep indurated ones undergo comparatively rapid involution. Cases of acne of years standing, which have resisted the most approved therapy of some of the most eminent men, have replied kindly to this form of treatment.

A remarkable and gratifying thing is that the thick, muddy, yellowish, oily appearance of the skin disappears. The texture improves, and a pinkish tint supervenes. The oily seborrhœa of the scalp also improves. It seems as if Sabouraud's dicta were true. We know the oily yellowish tinted skin long precedes the acne lesions.

It has not been found necessary, in any of our cases of acne vulgaris, to use staphylococcus vaccines, at least, not since we have employed the method above outlined. The acne bacillus seems to be the offending agent, and, although accompanied by the staphylococcus in nearly every lesion, the lesion is not a result of symbiosis; the coccus is, no doubt, only a secondary factor of no therapeutic importance.

In acne varioliformis, the rôle is changed, turned about completely, the staphylococcus being the main factor, and the acne bacillus, which is frequently associated with it, a secondary unimportant element. Acne vulgaris is essentially a disease of puberty, while acne varioliformis usually occurs after thirty. Our experience is not sufficient to state whether the immunity after the use of these suspensions is permanent or not.

CONCLUSIONS.

1. The dose of all forms of vaccines should be at first small.*
2. Small continuous doses are best.
3. Increasing the dose is frequently risky.
4. Stock suspensions we have found very reliable and can be used in most instances.
5. Autogenous suspensions are indicated when stock vaccines fail.
6. Clinical indications alone have guided us in our latest and best results.

*Doses of bacterial suspensions are, of course, approximate.

7. The opsonic index has proved too unreliable and too impracticable, and is not necessary.

8. Failure to obtain results in vaccine therapy may be due to faulty technique.

9. Vaccine therapy will fail in a certain percentage of cases.

10. Vaccine therapy is indicated in diseases of the skin due to a specific microorganism.

11. Bacterial suspensions can not be hastily and carelessly used as a therapeutic agent. Good results are only obtained by careful technique.

I wish to extend my thanks and appreciation to Dr. Robert C. Finlay, House Surgeon at the St. Louis Skin and Cancer Hospital, for his efficient assistance in pursuing the work included in this report.

Before closing I wish to thank Parke, Davis & Co., and H. K. Mulford Co., for their kindness in liberally supplying us with various vaccines for experimental purposes.

VACCINE THERAPY AS APPLIED TO SKIN DISEASES.*

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IN this paper I have simply given the results of my own experience with the use of vaccines in the treatment of cutaneous diseases at the Johns Hopkins Dispensary and in private practice during the last three and one-half years. Over three hundred cases have been treated. In my presidential address before this Association last year I made a few remarks on the results obtained during the first two years' work, but in this paper a more detailed description will be presented.

I mentioned in that address that some skin diseases may possibly be due to the elimination through the glandular apparatus of toxins or allied substances which were probably manufactured in the alimentary canal. Since the staphylococcus albus is a normal inhabitant of the canal, then its rapid proliferation under abnormal conditions may be the cause of further intestinal disturbances, viz: coated tongue, constipation, flatulence, anaemia, etc., which usually

* Read before the American Dermatological Association, Washington, D. C., May 3-5, 1910.

accompany this group of diseases, and the elimination of its toxins might produce the cutaneous manifestation. On this assumption staphylococcus albus vaccine was used. The results, as will be recorded later, were in some cases very interesting and beneficial, apparently upholding this causative theory.

Since we are quite ignorant of the causes of many other of the cutaneous diseases it occurred to me that the treatment by vaccine therapy of certain of these affections in an experimental way might furnish some interesting results, and such proved to be the case. The staphylococcus albus vaccine was again the remedy employed. One other organism which is always normally present in the alimentary canal, viz., the bacillus coli communis may also play an aetiological part in the production of cutaneous lesions and a vaccine is now being used, but I cannot give any definite observations about results at present. One vaccine, made from bacillus acnes, has been used very extensively in large numbers of cases of acne and has yielded, as will be described later, some remarkable results.

One feature was observed during the course of treatment by vaccine therapy and that was that the use of staphylococcus albus vaccine gave as good results as autogenous vaccines in staphylococcus aureus infections.

In none of the injections was there any local reaction except a slight burning, and on rare occasions a slight subcutaneous haemorrhage occurred. The constitutional effect produced by the vaccine was usually beneficial and it was only very rarely that any serious results followed.

Staphylococcus albus vaccine was then used extensively in varying amounts and at different intervals in four groups of diseases of the skin, viz.:

1. In those due to the presence and growth of the staphylococcus albus either (a) alone, or (b) where it predominated as a secondary invader. (a) Staphylococcal dermatitis, or what Unna calls staphylococcal folliculitis. (b) Acne vulgaris (where the albus predominated as a secondary invader), syphilitic ulcers, some forms of eczema, etc.

2. In those due to the presence and growth of the staphylococcus aureus either (a) alone or where it predominated as (b) a secondary invader, e. g., (a) furunculosis, sycosis vulgaris, etc. (b) Eczema madidans, syphilitic ulcers, dysidrosis, etc.

3. In those diseases due problematically to the elimination through the glandular apparatus of toxins which may be manufac-

ured in the alimentary tract, and since the staphylococcus albus is normally present in the alimentary canal then its proliferation under abnormal conditions and elimination of its toxins through the skin may be the cause of certain cutaneous eruptions, *e. g.*, erythema multiforme, erythema multiforme bullosum, pityriasis rosea, dermatitis herpetiformis, acne rosacea, and urticaria.

4. In those whose aetiology is entirely unknown, *e. g.*, psoriasis, lichen planus, lupus erythematosus, parapsoriasis, purpura and seborrhoeic eczema.

The dosage of staphylococcus albus vaccine used varied from 75 million to 1,000 million and the frequency of the dose varied very much from daily injection in one case, to treatments every other day in a number of cases, to weekly injections. The most common dose in the large majority of cases was about 300 million. The site of injection was usually in the upper arm just below the insertion of the deltoid muscle, and on rare occasions it was given in the thigh or in the skin of the back. I will not attempt to give all the details of the work done but rather generalize my remarks under the groups just given above.

Group 1. (a) Only a few cases (4) were treated with vaccines and they yielded readily to treatment. In one case, a man, with a fistula in ano, had numerous albus pustules scattered over both buttocks and was markedly benefited by the albus vaccine, 300 million being given twice a week for four weeks. Previously, the lesions had continued to relapse under local treatment only. In two cases of chronic nasal folliculitis the albus vaccine was used, but since local treatment was used as well it is difficult to decide how much of the cure was due to the vaccine and how much to the local application, except in one case where the salves had been used for some weeks previous with no benefit.

(b) During the first year's experience with vaccine therapy the albus vaccine was used on about forty cases of acne and it was found that it had a decidedly beneficial effect on the superficial pustular forms of acne vulgaris, but did not seem to affect the acne nodules. The dosage was 300 to 500 million weekly and if there were any increase in pustulation following the injection, as sometimes happened, then the dose was decreased. In a number of cases the weekly injections were continued for eight to ten weeks or even longer. In some patients it was noticed that a rest after about eight injections gave the patient a better chance to show the full benefit

of this form of treatment. About half of the cases were treated with vaccine alone, especially dispensary cases, and undoubtedly marked benefit resulted except in the nodular form. Some patients who suffered from constipation and indigestion were given remedies to correct those conditions. The majority of these cases had previously received only local treatment and the conditions had relapsed again and again so that one could follow the results produced by the albus vaccine. At least six of the private cases were relieved of their trouble by the use of the staphylococcus albus vaccine alone. Auto-gogenous vaccines were made at first but later it was found that stock vaccines acted just as well, so the former was not often used.

ECZEMA.

Very interesting results were obtained in the treatment of eczema by staphylococcus albus vaccine. In 1899 I showed that cultures obtained from the surface of weeping eczemas frequently gave pure growths of staphylococcus aureus and since, as I have mentioned before, I found that staphylococcus albus vaccine acted as well in cases of staphylococcus aureus infections, I began to treat cases of weeping eczema and later all forms of eczema experimentally with this vaccine. In all, sixty cases have been treated. The most marked results were obtained in the treatment of eczema seborrhœicum. It was thought in one case, where the seborrhœic element distinctly predominated, that bacillus acnes vaccine might benefit and although it was tried weekly for about four weeks, no benefit was obtained, but the disease was rather aggravated. The staphylococcus albus vaccine was then used, 300 to 400 million each week, with marked improvement after the first injection and the disease, which was rather extensive, being distributed over the scalp, face, chest, back, arms and legs, cleared up finally in about six weeks. The local treatment was not altered even when the vaccine was changed.

To convince myself whether the eczema cases were really benefited by the vaccine I would follow the cases along carefully with the usual local treatment, then if they were not soon relieved the vaccine would be used without altering the other treatment and then the improvement would be noted.

In a few instances when the disease was symmetrically distributed, *e. g.*, on both hands or both sides of the face, local treatment would be applied to only one side and the resulting benefit would be the same to both sides. A number of cases were treated

with the vaccine alone and one could definitely demonstrate the value of vaccine therapy. Some cases showed undoubted improvement a few days after the injection and the final disappearance of the eczema after five or six treatments, but a few required longer treatment.

The seborrhœic eczema was the form most benefited by the vaccine, then the pustular and weeping forms of eczema, whereas some varieties of the disease, especially the scaly and indurated patches were not affected at all in my experience. Some examples showing the benefit will be referred to here:

A young woman came with an erythematous eczema on both cheeks accompanied by itching and burning, the duration was four days. No other treatment was given except the staphylococcus albus vaccine, 300 million every other day. After the second injection the lesions had almost faded away.

A private patient who had had a violent itching papular and papulo-pustular eczema of the face for years, yielded rapidly to the vaccine treatment, 300 million being used once a week. The patient remarked that it was the most wonderful substance he had ever received.

Out of the sixty cases of eczema, twenty were markedly benefited by the staphylococcus albus vaccine and of the remaining forty, half were moderately benefited, but the effect on the remainder was nil.

The best results were obtained when the vaccine was used often, *e. g.*, every other day. Since I only used the vaccine once a week in the beginning this may account for the results not being so good at first.

In two cases where syphilitic ulcers were discharging rather profusely the use of staphylococcus albus vaccine was tried (300 million weekly) and the discharge began decreasing in amount in twenty-four hours after the first injection and began to increase again in four or five days. Finally after six or seven injections the ulcers healed up. The marked decrease in discharge was undoubtedly due to the vaccine. Of course the internal mercurial treatment was given at the same time, but the ulcers seemed to remain at the same stage and discharged very much for some weeks until the vaccine was used.

Group (2). The staphylococcus aureus vaccine was used at first on furunculosis, with beneficial and curative results, to prevent relapses, but if a boil had formed and especially with a necrotic plug,

this had to be treated locally as well. I found later that the staphylococcus albus vaccine acted just as well as the staphylococcus aureus vaccine for furunculosis. About twelve patients were treated with the former vaccine and all were cured with the aid of this mode of treatment. Some cases had received local treatment and kept relapsing and it was noted that the use of the vaccine stopped the relapses.

In the first case of sycosis vulgaris, from which I obtained a pure culture of staphylococcus aureus, I used the autogenous vaccine with very poor results and relapses occurred a few days after each injection. This happened after four injections when the aureus vaccine was discontinued and the albus vaccine was tried with quite remarkable results, 300 to 400 million being injected weekly until the case was apparently cured after six treatments. This patient was under my care three years ago.

In the later cases the staphylococcus albus vaccine was used and the majority of them (8 out of a total of 10 cases) were apparently cured with this mode of treatment. In some, local treatment was applied as well as the vaccine therapy, in others only the vaccine was given. In the last case, which I saw only two weeks ago, I tried the use of the staphylococcus albus vaccine, 300 million every third day, and after three injections the disease had disappeared. This patient had been treated by the older methods, salves and lotions, with no benefit and when the vaccine treatment was commenced he had about one hundred typical aureus follicular pustules scattered over the bearded portion of the face.

There is no doubt in my mind about the marked benefit to be obtained in the treatment of sycosis vulgaris by vaccine therapy and its use is a distinct gain in the successful management of this disease. I have seen some cases treated with X-rays and local applications still relapse, yet were cured by the use of the vaccines.

Five cases of dysidrosis were treated with staphylococcus albus vaccine. Three were private and two were dispensary cases. The dispensary cases improved somewhat under this treatment. One case (private) stands out distinctly as showing the benefit of vaccine therapy. The patient was a man who had had a painful vesicular eruption on both palms and fingers for about five weeks. I treated him for a week according to the usual method with local applications. The disease continually relapsed, and some of the vesicles became secondarily infected. On the seventh day a lymphangitis began up the right arm and the right epitrochlear gland was enlarged. I gave

him 1,000 million of the albus vaccine. In twenty-four hours his hands looked better than they had for a week. Two days later a slight relapse appeared and I repeated the same dose of vaccine. The eruption cleared up altogether and the lesions were entirely well in a week.

We now come to Group 3. The first disease mentioned is erythema multiforme and the staphylococcus albus vaccine was tried on four cases of the usual variety. Three hundred million were injected on the first day of treatment and this was repeated every third day. Three or four injections were enough. In one case, a man, the eruption was on the backs of both hands and palms and in the mouth; on the hands the lesions assumed the color of a typical erythema iris. The patient had had the disease a number of times but there had been no attacks for nine months. His bowels were constipated so he was ordered cascara and the albus vaccine was used. Only three injections were given, one every third day, and the lesions then disappeared in ten days. The patient remarked that the disease had disappeared more quickly than it had ever done before.

The use of the vaccine in two cases (private patients) of erythema multiforme bullosum yielded some rather remarkable results. The first case was a young man who came to me two years ago and who had had about eight attacks of erythematous and bullous lesions on erythematous patches on both hands and arms, legs, mouth and lips. The disease had relapsed three times during the previous three months and when I saw him he had the most severe attack he had ever had. The tongue was coated, the bowels constipated and the patient was very nervous and worried about himself. Cultures from the vesicles were sterile and no organism could be detected by stained smears. I found he had been taking the usual remedies for his previous attacks. He was given laxative medicine for the constipation. Staphylococcus albus vaccine, 300 millions, was injected into his arm and this was followed by injecting 400 millions every third day. The eruption yielded rapidly to the treatment and the lesions were healed in about ten days. The patient made the statement that the lesions had disappeared much more quickly than by any previous treatment he had received. The vaccine was injected once a week for five weeks afterward as a protective measure.

He kept quite well for seven months. At a dinner one night he drank seven cocktails and the eruption reappeared next morning. The vaccine method of treatment was used again with successful

results. He has now kept pretty free from the eruption for the last eighteen months.

The second case was still more interesting because I followed it even more closely for the last twelve months. The patient was a young married woman who had very severe relapses of bullous erythema multiforme for two years and for the last six months had been hardly free of the eruption. One attack was so severe that she was laid up in bed with the disease. The whole of the upper extremities, including the palms, the feet and the mouth, were extensively covered with lesions. The mouth was so sore that the patient could hardly swallow. She gradually improved but was not clear of her eruption when she was referred to me by Dr. Barker. On account of the success of the vaccine therapy in the first case I commenced to use the staphylococcus albus vaccine on the patient. I gave the dose not so frequently at first because of the fear of overdosing, but later, on account of the slowness of recovery and the abortive attempt now and again at relapse, I used 300 million three times a week for six weeks. The lesion then healed up entirely and what I especially noticed was the fact that the badly coated tongue would not clear up until I commenced using the vaccine three times a week, although the patient was taking stomachic tonics and laxatives. I have confirmed this observation about the effect of the vaccine on the coated tongue a number of times in other diseases, especially in acne rosacea. The patient has had no lesions now for six months, but during the three months previous there were three abortive attacks consisting of large pinhead-sized vesicles on the forearms and arms, and a few injections of vaccine every third day soon caused them to disappear and the tongue to clear. The patient is now perfectly well. She is a very intelligent and well-educated woman who has followed the effect of the vaccine therapy on herself with great interest and she is convinced that it was this remedy which cured her. In my opinion the vaccine proved to be a very valuable adjunct in the treatment.

Four cases of pityriasis rosea were treated with staphylococcus albus vaccine. The first patient I used it on was a young man who had had syphilis and who had been treated vigorously with mercury off and on for two years by a very good physician. No symptoms of syphilis were noted; nothing except the pityriasis rosea, and the annular form was present, principally on the sides of his body. Mercurial injections were given by me but no effect was produced on the eruption. The usual treatment of this disease was then tried

but the results were very disappointing. The mercury then was discontinued and still there was no improvement. X-ray was then tried and it was thought that some benefit had taken place but the lesions would not disappear. The staphylococcus albus vaccine was then used experimentally and all other treatment was stopped. Four hundred million bacteria were injected twice a week and the lesions began to fade in three weeks and gradually disappeared after two months' treatment. No relapse has occurred in the last six months. There was no doubt in this particular case that the albus vaccine distinctly helped the eruption to disappear. I would like to observe that Dr. E. R. Strobel, Assistant Dermatologist at the Johns Hopkins Hospital, and myself have observed at least ten cases of pityriasis rosea, which is often rather persistent and of the annular variety, associated with syphilis.

The next case, a private one also, was a young lady who had a few scattered lesions of this disease and they would not disappear under the usual form of treatment, yet were made to heal up under weekly vaccine injections. She developed later a very acute and severe attack of the disease which covered almost the whole body. The patient had to go to bed and had to be kept in a cold room. At first cooling antipruritic lotions were used, strict diet was ordered and a stomachic laxative tonic was given. The patient gradually got worse and the staphylococcus albus vaccine was tried twice a week. She claimed that she always felt better after the injection, and the itching, which was at night very severe, was alleviated; but after using the injections for three weeks I felt very doubtful whether they did any good or whether it aggravated the disease. The patient is sluggish and of a lymphatic temperament, although her intellect is of a high grade. As the eruption was fading the weekly vaccine appeared to help it.

The two other cases were dispensary cases and were not followed so well. The result of the vaccine treatment was doubtful.

Seven cases of dermatitis herpetiformis were treated by vaccines; four of them were dispensary cases and after being benefited by the treatment disappeared, so that one cannot say whether they were permanently aided or not. Three private cases have been apparently markedly improved by the vaccine therapy. Two of them were rather mild cases and were treated over nine months ago, but I have been unable to follow the final results. A private patient, a married woman, when she came to me was getting almost mentally

unbalanced with the frightful itching. She has had the disease for five years and had applied sulphur salves and baths and taken various medicines. The staphylococcus albus vaccine was used on her, 300 million every other day, and marked improvement began to show after the second injection and fewer new lesions appeared. The menses came on and the patient developed a coated tongue and the violent itching returned. She again became despondent. After getting over the menses the vaccine was tried again every other day when the improvement became even more marked so that no new lesions are appearing. The patient has been treated only three weeks but she declares she is free of lesions and in better health than she has been for years. The case is still under observation. In this disease cultures are always negative from the clear vesicles and bullæ so no autogenous vaccine could be used. The use of vaccine in this disease is, as you see, in the experimental stage, but in my judgment is still worth trying. I should advise the more frequent use of the vaccine in severe cases, as I have used it in the last patient.

Sixteen cases of rosacea were treated and the treatment of this disease also yielded some very marked results. Ten cases were private patients and these I could follow much better and closer than the dispensary patients. The result of my observations on the treatment of this disease is that, as you may suppose, when the rosacea is complicated with acne pustules, the albus vaccine causes them to disappear, but in addition to this the flushing of the skin decreases. In patients who had no pustles but only the hyperæmic flushing of the nose and cheeks this would show marked decrease after each injection, especially when given twice a week. At the same time it is necessary to see that the bowels are kept regular and that attention is given to proper diet.

Urticaria. Six cases of this disease have been treated with vaccine with and without the other forms of treatment. In one case in the dispensary it seemed to act very beneficially but the patient did not return after three visits. A private case of chronic persistent relapsing urticaria which has lasted for years seemed to improve quite markedly under the biweekly injection for seven weeks of staphylococcus albus vaccine (300 million), and the patient declared it was the best remedy he had had for many a year. Six months later a relapse occurred, the vaccine treatment was renewed, but he did not think it was at all helpful after six weeks' trial. Since the vaccine was only given once a week and previously twice a week, one should be apt to try the vaccine therapy again.

The treatment of urticaria factitia by staphylococcus albus vaccine is of doubtful benefit, but still if I had to treat any persistent chronic cases which resisted all other forms of treatment, I should be very apt to try the vaccine therapy again.

Those cases in Group 4, where the ætiology is unknown and where the albus vaccine was used experimentally, yielded varying but mostly negative results. Seven cases of psoriasis were fully tried for some weeks with weekly and even biweekly injections of staphylococcus albus vaccine, 300 to 500 million, with entirely negative results. No effect was produced either one way or the other and in either the acute or chronic stage.

The same results followed the use of this remedy in two cases of lichen planus, one of which was quite acute and the other chronic.

The vaccine was tried on four cases of lupus erythematosus and on one patient where the disease was in an early stage and was accompanied by much rosacea of the face, marked benefit was obtained by the use of the vaccine. In another case, a lady who was shown before the Association when it met in Baltimore, there was undoubtedly some benefit from the use of the vaccine as against other previous treatments. At the same time I should sum up the results as doubtful. On two other chronic cases the results were negative.

The vaccine was fully tried for some weeks on two cases of parapsoriasis, again with distinctly negative results.

In two cases of purpura simplex of the legs no specially marked benefit was obtained, except in one case when there were relapses and marked pigmentation following the eruption, there seemed to be some definite benefit as against the non-use of the vaccine.

The use of staphylococcus albus in seborrhœic eczema I have already described.

The second vaccine used was that of the staphylococcus aureus and it was employed in some cases where the disease was caused only by the presence and growth of this organism, *e. g.*, (a) furunculosis, some cases of infective dermatitis and sycosis vulgaris, and in those where the aureus predominated yet was a secondary invader, *e. g.*, eczema madidans, acne vulgaris; but since, as I mentioned before, the staphylococcus albus vaccine was found to give as good results as when the latter was used.

In one case of pustular acne the albus vaccine was used at first with excellent benefit, then a culture was made from one of the lesions and the aureus grew in pure culture. A vaccine was made and

this was employed, but the results were very discouraging, so that the patient stopped all treatment.

The third vaccine which was most extensively used was that made from bacillus acnes and it was employed in the treatment of acne vulgaris. Since this paper will also be printed in the Transactions of American Physicians and Surgeons I thought it proper to summarize in a few lines the reason for the use of this vaccine. The large majority of writers of the text-books on diseases of the skin give the cause of acne vulgaris as the staphylococcus albus in addition to the predisposing causes or, that the cause is unknown. Many investigators could only get the staphylococcus albus in culture from acne lesions. Unna in 1893 found bacilli in smears and sections from comedones and acne lesions from twenty cases, and he thought these bacilli were the cause of acne although other microorganisms were present and no other evidence was given, no cultures were made, nor was proof given of the pathogenicity of the organism, etc. Hodara, in 1894, confirmed Unna's observations and grew the bacillus acnes in mixed cultures but did not get any pure culture. Later Sabouraud found these bacilli in seborrhœic plugs but did not believe the organisms to be the direct cause of acne. He grew these bacilli on a special medium after isolating it from the staphylococcus albus.

In 1899 I found a bacillus which I named bacillus acnes in acne in 96 pustules and nodular lesions from 55 patients and obtained 11 pure cultures of the organisms on glycerine agar. I proved that this bacillus was pathogenic in animals from which pure cultures of the organisms were again obtained. During the period of that work there was no difficulty in growing the bacilli on ordinary glycerine agar. In 1903 I confirmed my previous work by finding the bacillus acnes present in 240 smears from 86 patients; and pure cultures of the organisms were obtained from 62 lesions. Sections showed that nodular acne was a giant cell granuloma and clumps of bacilli were found in the sections stained by Gram's stain. I also found that the sera of patients suffering from severe acne caused clumping or agglutination of the bacillus acnes even when diluted 1-100, which caused me to think that the anaemia, coated tongue and constipation, were probably the result of acne and not predisposing causes of the disease. Others have confirmed my observation, notably Engman of St. Louis, Fleming and Western of England, and others. Fleming, as well as myself, have noted that when too much

vaccine is used a flaring up of acne nodules appears after a few days and a pure culture of bacillus acnes can be obtained from them. This is a further proof that the bacillus acnes is the cause of acne, being similar in principle to the tuberculin test.

One hundred and fifty cases of acne have been treated with vaccines and of them about forty, as I have mentioned before, were treated in the beginning ($3\frac{1}{2}$ years ago) with staphylococcus albus vaccine alone, later the bacillus acnes vaccine was used and in many cases this latter remedy was used alone.

As I reported before this Association in September, 1908 (Transactions of the American Dermatological Association, p. 153) I made a bacillus acnes vaccine some months previously, which was the first vaccine of this kind to be made and used for acne, and I reported that a number of cases of this disease had been treated and showed marked improvement, but reserved a definite opinion about the results until more extended observations had been made. At first I used large doses, 100 million to 200 million of bacillus acnes vaccine, but found later that the dose was too large producing in some cases definite temporary constitutional disturbances.

I think it perhaps interesting to include here the notes of one of our Johns Hopkins fourth year students, Mr. A. E. Johann, who had rather severe acne, yet of the pure nodular type, and whom I treated with the bacillus acnes vaccine alone when he came under my care. His age is twenty-one years. Nearly four years ago he was given injections of the staphylococcus albus vaccine in amounts varying from 50 to 150 million, for a period of eighteen weeks (by Dr. Cole). The opsonic index at this time was used as a guide to determine the amount of the injection. Slight improvement followed. The vaccine seemed to have no effect upon the formation of large indurated acne nodules. (No bacillus acnes vaccine was given at this time). Upon discontinuing the treatment the acne resumed its former severe condition. Nothing further was done for nearly two years. The patient was then given twelve weekly injections (by myself) of 100 to 150 million of bacillus acnes and 200 to 350 million of staphylococcus albus per week.

Symptoms following these injections were (1) a slight amount of tenderness at the site of injection. (2) After a period of twelve hours and lasting usually about thirty-six hours a feeling of lassitude, both mental and physical, aching of the extremities and a great demand for sleep, ten and twelve hours being necessary the first two nights following the vaccine injection. The patient at one injection

received 250 million of bacillus acnes. The injection was followed by the above mentioned symptoms and the appearance of a number of fresh, indurated, acne nodules. After twelve weeks the treatment was discontinued with some improvement in the condition of the face. His tolerance for the vaccine seemed to diminish as the face improved. The treatment was again resumed in four months for a period of four weeks. Injections were then given of 50 million of bacillus acnes and 250 million of staphylococcus albus. Little change was noted when the treatment was discontinued, but considerable improvement was noted the following two months, after which time the acne again began to become severe. Treatment was again resumed, the patient was given six injections of 12 million of bacillus acnes and 100 million of staphylococcus albus. Even 25 million now seemed to cause an increase in the pustules. With injections of 12 million no symptoms of any kind were noted. The face improved much under this treatment, the antagonistic action of the bacillus acnes vaccine toward the large indurated type of nodules being most marked. The patient at this time considered himself well enough to discontinue treatment and believes his condition has continued to improve since the vaccine has been discontinued.

His skin trouble relapsed during the winter months when his studies were severe but this winter, as the result of further treatment by vaccines he is very markedly improved.

In private cases (91) which form the majority of the whole number treated, the treatment extended from two to twelve months. Some were given the treatment without vaccine at first, some for a short time with vaccine only and some with vaccine therapy plus other forms of treatment, viz: X-ray, local applications and laxatives. As the patients got better less and less dosage was given and the full benefit was derived after all vaccines were discontinued. Some cases of long standing would get apparently well and remain well for some months and then relapse, but much shorter vaccine treatment was necessary to cause the disappearance of the disease. Many cases, especially in private practice, have been apparently cured and remained cured from one to two years.

One case of the pure nodular type in a man who has had the disease for many years has been practically cured with the bacillus acnes vaccine and this has been the only treatment which has been effectual.

My assistant at the Johns Hopkins Dispensary, Dr. H. Hazen, reports to me that he followed one case of nodular acne and he treated

one side of the face locally and left the other side alone, and gave bacillus acnes vaccine. Both sides cleared up very satisfactorily. He commenced with 3 million and gradually increased to 30 million which dose was given once a week. The patient was well after seven injections.

When the acne is of the nodular and scarry type I have used the X-ray as well as the bacillus acnes vaccine but just as good results have been obtained without the X-ray treatment. It is still necessary in my opinion that the patient's bowels be kept regular and if suffering from indigestion then that should be corrected. It is often noted that many patients with severe acne have regular bowels and very good digestion.

As the result of my experience with the treatment of acne during the last three years I should say that vaccine therapy is of undoubted value and in many cases curative. Of the vaccines to be used the staphylococcus albus vaccine is very helpful in cases of the superficial pustular type, that is, when the staphylococcus albus as a secondary invader predominates, but where the nodular variety is present, then the bacillus acnes vaccine is the proper remedy to use. One would be apt to conclude from this then that mixed vaccines would be the ideal treatment but I, myself, only use the bacillus acnes vaccine unless the secondary invader predominates markedly.

Even with vaccine therapy some cases are apt to relapse because I think the patient's general condition is apt to relapse and so presents favorable soil for the organisms to proliferate again and cause new lesions. The bacillus acnes is normally present in the skin and waits for an opportunity to grow, and since some patients are far more susceptible than others, then relapses more often occur in those cases. I recommend the dose to be given at first to be about 5 million, then gradually increase each week to 30 million, but if new nodules appear three days after the injection then too much vaccine is being given. A great many of my private patients were rid of their acne after seven to ten injections.

In patients who have no acne lesion but who, in young adult life, have, over the nose and cheeks, numerous large patulous openings out of which can be expressed horny plugs or comedones, the bacillus acnes vaccine has been used with some success, but all the comedones must be expressed first. The vaccine has no effect whatever on comedones. One patient, a physician, has improved so much that he considers himself cured. Bacillus acnes vaccine had also a bene-

ficial effect on the oily seborrhœa which accompanied the presence of acne, but its results were not as good as the application of X-ray.

SUMMARY.

As far as vaccine therapy is concerned in the treatment of cutaneous affections I have found it to be a distinctly valuable adjunct to our therapeutics. The staphylococcus albus vaccine is of undoubted value in the treatment of all pustular affections of the skin but especially, in my experience, in the treatment of relapsing furunculosis, staphylococcus dermatitis, sycosis vulgaris, in certain forms of eczema, pustular rosacea and in acne when the disease is mostly secondarily infected with the staphylococcus albus.

I have also found the vaccines to be of value in the treatment of erythema multiforme, especially of the relapsing bullous type, and in rosacea, where the flushings were decreased by the vaccine therapy. It was also helpful in dermatitis herpetiformis and pityriasis rosea. So much so that I should recommend vaccine therapy to be tried when the disease does not yield to the usual method of treatment. Bacillus acnes vaccine I found to be of great value especially in the treatment of those chronic nodular relapsing types of acne vulgaris, and has proved to be, in my hands, in a great many cases a curative agent.

VACCINE THERAPY IN THE TREATMENT OF DISEASES OF THE SKIN AT THE MASSA- CHUSETTS GENERAL HOSPITAL.

By HARVEY P. TOWLE, M. D., Boston, and GEORGE P. LINGENFELTER, M. D., Denver.

BEFORE any new method in medicine or surgery can attain an assured position it must have passed successfully through an evolutionary period of longer or shorter duration. But a small percentage survives the ordeal and almost none pass through unchanged, and this, it seems, will be the case with the theory of vaccine therapy. It will undoubtedly survive, but it has already undergone very considerable modifications. When first announced, enthusiasm was so intense that adverse criticism was almost unheeded. For a time it was apparently believed that the final word

in the treatment of bacterial disease had been spoken. The natural result was that the method was tried upon every variety of disease without much discrimination. It gradually became apparent that there were many difficulties to be surmounted which required laboratory facilities. This served to eliminate experimenters without such facilities and to put the method upon a sounder basis. With the restriction of its employment to trained workers, the method entered upon the second stage of its evolution—that of scientific experimentation.

The great mass of data resulting from the indiscriminate experiments of the first stage of enthusiasm was now sifted, and it began to be realized that the method had decided limitations, and was by no means suitable for every case. This was the first step toward a fuller understanding. The cases to be treated by vaccines were now selected with greater care. Up to this time the original statement that the estimation of the opsonic index was a *sine qua non* had been accepted without much question, as had also the statement that autogenous vaccines must be used. The ensuing trouble and delay were so great, however, that experimenters began to question the necessity of these two postulates, and, from questioning, began to put their suspicions to the test. It was soon found not only that the clinical symptoms furnished the experienced worker with a sufficient guide, but also that most cases did as well with stock vaccines as with autogenous. Since then the index has been estimated and an autogenous vaccine made only in certain cases. This simplification made it commercially possible for manufacturers to prepare stock vaccines and place them upon the market. The result has been to render the individual almost independent of the laboratory and to increase immeasurably the use of vaccines. In a sense, however, the acceptance of this simplified technique was a confession of weakness in the original theory, as it made the method less scientific and more empirical.

With this simplification of technique the method now entered upon the third stage of its evolution which is not yet completed. Here and there an occasional investigator began to analyze the great accumulation of reports and to try to estimate from them the value of the method. At first only a few, with the passage of time, more and more men have been trying to solve the questions: When the result seems favorable, is it permanent or temporary? Do the results justify the abandonment of the older methods, or

do they indicate that vaccine therapy should, for the present at least, be regarded as an adjuvant?

In short, it is characteristic of the present situation that belief is growing that the experimental stage has been passed and that sufficient data have accumulated now to justify the analysis of results from the point of view of the welfare of the patient. Just as in the experimental stage conclusions as to the affections in which vaccine therapy gave the best results and as to the size of the dose and frequency of administration best suited to given conditions were drawn from the grand total of accumulated reports of many small series, so the answers to these later questions must be drawn from a total made in a similar way from contributions both large and small.

The writers, therefore, find their excuse for this paper in the fact that even their small series may help to swell this final total. Before giving the figures which form the basis of their conclusions they desire to state first the difficulties under which these data were obtained. Until very recently no patients received vaccine treatment in our skin department itself, but were sent to the laboratory, where the general vaccine work of the hospital was done. In the laboratory vaccine therapy was practised by a constantly changing staff, so that the cases here reported represent the work of a considerable number of individuals. Because of the number of workers concerned and because of the fact that, as no definitely organized department of vaccine therapy existed, each worker was more or less independent, the writers have experienced much difficulty in assembling their statistics. Undoubtedly many reports have escaped their search. Moreover, while a considerable number of reports were complete enough to allow an independent investigator to draw conclusions from them, others were more valuable to the individual making them than to one who had no personal knowledge of the cases. Although none of the cases here reported have been treated by either of the writers, they fortunately were aided in judging of the results claimed through their subsequent acquaintance with a considerable number of the patients. They realize fully that under these conditions their statistics can in no wise be considered complete, either in regard to the total number of cases or in regard to detail. It is not their intention to criticize the work of any individual, but rather, using the collected works of others, to whom they now extend their thanks, to determine whether from them

they could evolve an answer to the questions just given as to the permanency of the results and their superiority as compared with older methods. In forming their judgment the data of each case were first tabulated in detail and then summarized. As we are more concerned with the total than with individual details only the summaries are given below.

ACUTE FURUNCULOSIS. Passing first to furunculosis, it was found that the records divided the cases into acute and chronic furunculosis. Of the acute type there were 30 cases, in 29 of which stock vaccines of the *staphylococcus aureus* were used, and in one case only, autogenous vaccine. The doses ranged from 25,000,000 to 300,000,000 bacteria, given in gradually increasing amounts at an average interval of three to five days. The results were given as—cured, 13; relieved, 8; not relieved, 9. The duration of treatment varied from 6 to 100 days, and in the great majority of cases was over three weeks. An analysis of these data, it will be seen, does not give results differing from those generally reported. It would seem that the best results were obtained by the administration of 100,000,000 to 200,000,000 at intervals of four to five days, and that, as has been noted generally, too frequent intervals or too large doses had an unfavorable influence.

CHRONIC FURUNCULOSIS. Of chronic furunculosis there were 35 cases, 34 of which were treated by stock vaccines, 1 by autogenous. The doses varied from 50,000,000 to 300,000,000; the duration of treatment extended from 17 to 61 days, and in nearly 50 per cent. of the cases was over one month. The best results were obtained by doses averaging from 100,000,000 to 200,000,000 given at intervals of from three to five days. Of the 35 cases, 19 were reported cured, 4 relieved and 12 not relieved.

If now we summarize these, we find a total of 65 cases, of which 32 were cured, 12 relieved, 21 not relieved. In 12 of the 65 cases, or 18.4 per cent., there were relapses in from four days to several months, occurring most frequently in those cases treated by rapidly repeated injections. It is rather striking that if we compare the results obtained in acute with those obtained in chronic furunculosis we find that a greater percentage of cures occurred in the chronic than in the acute (54 per cent. as against 43 per cent.). In endeavoring to find an explanation of this fact a closer analysis showed that the average interval between injec-

tions in chronic furunculosis was slightly longer and the doses slightly smaller than in acute furunculosis.

CARBUNCLE. In the treatment of carbuncle the results from injections of staphylococcus vaccine were good. Every case was apparently cured in from 7 to 35 days by injections of 100,000,000 to 200,000,000 bacteria, given at intervals of from one to three days.

ACNE VULGARIS. At first a stock vaccine of the staphylococcus was used in cases of acne, apparently because of the statement originally put forth and at first accepted that acne was due to the staphylococcus infection. The results were so little encouraging, however, that but few cases were treated by this method. (Lately, autogenous vaccines of the acne bacillus have been tried, but the reports of these cases are not yet available.) There were only 8 cases treated by stock vaccines of the staphylococcus. Doses of 75,000,000 to 350,000,000 were given. The number of treatments ran as high as 93 in one case, given over a period of ten months. The writers are familiar with this particular case and obtained from the patient a statement to the effect that during the course of treatment the conditions constantly varied from better to worse. With every fresh attack of indigestion a new crop of acne lesions would appear which the staphylococcus vaccine seemed powerless to prevent. Of the 8 cases, only 2 were reported cured, one after six months of treatment, the other after two weeks. In 5 the result was questionable, and 1 was reported as improved.

CERVICAL ADENITIS. The results in the treatment of this affection were rather unsatisfactory. While some cases cleared up completely, many others improved only up to a certain point. In some of them, while the original seat of the infection apparently healed under injections of tuberculin, new lesions developed during the course of treatment. Occasionally a case seemed to improve rapidly and was healed in a short time; in others, however, the treatment extended over many months without satisfactory result. The average injection began with a dose of .0001 to .0002 cc., which was gradually increased in a few cases to .006 cc. and .007 cc.

LUPUS VULGARIS. Eight cases of lupus vulgaris were discovered which had been treated by tuberculin injections. Inasmuch as there is considerable dispute as to the efficacy of vaccine treatment

in tuberculosis of the skin, it may be worth while to go into some detail.

In Case I there was involvement of the skin and of the mucous membranes of the nose. After many treatments the cutaneous lesions had not been affected appreciably, but the lesions of the mucous membranes had improved temporarily. As, however, local treatment had also been employed the degree of influence exercised by the tuberculin is a matter of doubt.

In Case II the alæ nasi and the mucous membranes were affected. Under older methods of treatment the lesions had almost healed at one time, then relapsed. After a three months' trial of tuberculin, the Dermatological Department advised that further treatment by this method be abandoned. The advice was not heeded and the injections were continued. After five months it is recorded in the Skin records that the cutaneous manifestations are not at all improved, but the mucous membranes have been considerably benefited. In this case, however, it was necessary later to resort to curettage.

Case III was a girl with a large patch upon one cheek. After three months' trial of tuberculin its discontinuance was advised by the Dermatological Department as in the previous case, but the advice was not heeded. One year later the patch was removed by surgical interference.

Case IV, a girl with several disseminated patches, showed considerable improvement after seven months' treatment.

Case V was a woman with very extensive involvement of the neck, shoulders and upper chest. A note made in the Dermatological records after six months' treatment by tuberculin reads that while the swelling was less the condition of the skin was otherwise unchanged.

Case VI showed involvement of both sides of the nose and both cheeks. There was no improvement after a year's treatment.

Case VII was one of many years' duration which involved the upper lip, the mucous membranes of the nose and pharynx, and apparently the lining of the antrum. She was treated at intervals for a period of eight months by injections of tuberculin (TR), the dose varying from 1-4000 to 1-1000 mg. The treatment was given at intervals of a week for a month at a time, followed by an interval without injections. After five months the patient became so susceptible that after the injection of 1-1500 mg. there was a sharp reaction, making cessation of treatment imperative. During the course of treatment the skin lesions were not much improved, but the condition of the mucous membranes became decidedly better and the discharge was lessened to a very marked degree.

In Case VIII, a small boy with multiple foci, injections were given for a period of several months at rather long intervals. For a time there seemed to be some improvement, but the lesions speedily relapsed.

FOLLICLIS. One case of folliclis was treated by tuberculin and received nine injections, but without apparent benefit.

SUMMARY.

If now we sum up our impressions based upon a consideration of these cases, it would seem that the best results from vaccine treatment have been obtained in carbuncle, but if we take into

account also the time employed, it is a debatable question whether the results of vaccine therapy are superior to those yielded by the older surgical measures.

In the treatment of furunculosis, a disease ordinarily considered to be especially amenable to vaccine treatment, our figures are distinctly disappointing if the duration of treatment, the failures and the number of relapses are taken into consideration.

The number of cases of acne reported is too few for any judgment, but seems to agree with the now generally accepted view that the staphylococcal vaccines may temporarily clear up any secondary infection existing, but will have little effect upon the course of the disease itself.

In cervical adenitis the method of vaccine therapy does not seem to be of particular advantage. In lupus vulgaris there seems to be no doubt that the method commends itself in the treatment of lesions of the mucous membranes, but such is not the case in regard to the treatment of cutaneous lesions.

In the face of these conclusions we feel justified in assuming that while vaccine therapy is undoubtedly a step in the right direction, the results obtained, considered as a whole and from all points of view, are not sufficiently superior to recommend the complete abandonment of the older, well-tried methods. The results seem to show, rather, that we should avail ourselves of this new therapeutic agent as a powerful adjuvant to other methods rather than as a specific. It may be that in the future our knowledge of the exact meaning of the vaccine action will be sufficiently enlarged to enable us to advance still further along the line in vaccine therapy.

DISCUSSION.

DR. HYDE said it was quite a task to discuss the important questions that had been raised by the readers of these very interesting papers. Dr. Ormsby had superintended this part of their work in Chicago, and undoubtedly he could report on it. The results they had obtained were in some instances brilliant, especially with the autogenous vaccines; at other times they were disappointing. In connection with their work with the vaccines he could at least say that so far as he knew, no harm had been done in any instance,—which was something.

It seemed to the speaker that Dr. Gilchrist had failed to define as accurately and definitely what he meant by "eczema" as had Dr. Engman, who in every instance where he used the word had given us some idea of the type of eczema in which the vaccine was employed, as, for example, the tubercular form of Unna, and so on. To his own mind, Dr. Hyde said, the word eczema had ceased to have much significance: we were gradually driving this vague term into the background, and explaining most of the cases which we used to call eczema by terms which had a more definite meaning in dermatological practice.

As to using the vaccine treatment while applying local applications to one side of the face only, for purposes of comparison, the law of symmetry would explain the improvement in many of those cases. If one side improved, the other was also likely to do so, irrespective of the method of treatment employed, whether by the vaccine method or any other.

As to the relation between pityriasis rosea and syphilis, Dr. Hyde said that he had seen well-marked pityriasis rosea in probably half a dozen old syphilitic cases. To him this had no significance whatever; it was simply pityriasis rosea occurring in a patient who had had syphilis. The enormous majority of cases of pityriasis rosea seen by him had not even a suspicion of syphilis, and the possibility of mistaking some of the late forms of circinate erythema, sometimes of syphilitic origin, for the lesions of pityriasis rosea was certainly to be considered.

As for the value of vaccine therapy in pityriasis rosea as evidenced by an improvement occurring within a month or two, the speaker said he would regard such evidence of very slight value, as it was rare not to see these patients relieved by the usual methods of treatment within a fortnight.

In severe cases of syphilis their results had been very brilliant indeed. In these cases he thought they had used the autogenous more than the stock vaccines. In syphilis vulgaris which tended toward the lupoid type one had at times to deal with a very obstinate disease, and in those cases he knew of no remedial measure that had produced better results than the autogenous vaccines.

DR. BULKLEY said that although he had had no experience with vaccine therapy, he had listened to the papers on the subject with a great deal of interest, and while he could not deny the favorable reports that he had heard and the few that he had seen following this comparatively new method of treatment he still held that there was a more important underlying factor than the mere skin manifestation, and that when the system was in proper condition, these various microorganisms would not be able to make any headway. Only temporary benefit could be expected as the result of this vaccine treatment, and in all recurrent lesions one must look for the disturbance in metabolism which lay at the bottom of the trouble. Dr. Bulkley said that while he had nothing but praise for these papers, and while he fully appreciated the immense amount of labor they entailed, he could not but feel that vaccine therapy would not have the permanent value that was hoped for.

DR. SHERWELL said that while he did not feel qualified to discuss these papers on vaccine therapy, his general views on the subject were somewhat along the line of those voiced by Dr. Bulkley, namely, that in the treatment of many of these conditions one must seek out the underlying or constitutional factor. Acne, for example, was usually associated with malassimilation of food, and intoxication from the lower portion of the intestinal tract, and further, as he believed, from disorder of any or all of the pelvic organs and viscera, developmental or otherwise. At any rate, he had always believed that this played a very important rôle in the production of acne.

Aside from his personal views on the subject, Dr. Sherwell said, he had listened to the papers of Drs. Gilchrist, Engman and Towle with a great deal of interest and pleasure. He would follow with the keenest attention the future history and development of vaccine therapy, and he would be pleased to see dermatology progress in this as in other directions.

DR. SHEPHERD said that one of his assistants went over this work with Dr. White and tried the method quite extensively and his results with the vaccine treatment were brilliant in acne, especially in the superficial forms. He also obtained excellent results in furunculosis and in the treatment of car-

buncles. In sycosis, cases that were rebellious to other methods, yielded remarkably well to the autogenous vaccines; in fact, his most satisfactory results were obtained in sycosis. Dr. Shepherd said they had not tried the acne bacillus, but had used the albus quite extensively. In some of the deeper forms of acne, the treatment was not satisfactory.

DR. STELWAGON said he had, before hearing these two valuable papers, about reached the conclusion, both from his own observations and from the work of other investigators, that the enthusiasm as to vaccine therapy was on the decline. A few years ago one of his assistants did some experimental work with the stock vaccines in sycosis, acne and furunculosis, and while favorable results were obtained in individual cases, the results, upon the whole, were not encouraging. In sycosis vulgaris occasionally a brilliant result was obtained, but it was not, as a rule, lasting. In acne the result was also at times moderately favorable, but relapses were apt to occur. Possibly this partial non-success was due to the use of stock vaccines, although Dr Engman's experience seemed to show equal success with both stock and autogenous vaccines.

The speaker said that so far as his experience and observation went, experimental vaccine treatment was absolutely without indicative value in such diseases as impetigo, pityriasis rosea and erythema multiforme, as in these cases one had to deal with capricious and limited diseases which usually disappeared spontaneously within one week to several weeks.

As to comparison with the other usual methods of treatment, Dr. Stelwagon said he could not recall a case of chronic furunculosis that had been under his care for two, three or four months that did not get well without relapsing. He was equally convinced that most cases of acne of moderate severity would show a practical improvement or recovery within from three to six months. He questioned very much whether better results could be obtained under vaccine therapy. Nevertheless in view of the brilliant results of vaccine therapy as indicated in the papers just read he would feel it his duty to take up the method again experimentally.

DR. CORLETT said that vaccine therapy was new, and like many other new modes of treatment it was liable at first to be misused and misjudged, but that eventually it would find its proper place when its beneficial effects would be more properly appreciated. In Cleveland they had been using this method of treatment at the Lakeside Hospital for two or three years under Dr. Ladd, and while he could not give any statistics, he was in a position to give his general impression of the results.

In acne vulgaris, some cases had been treated very successfully, including some that had resisted other forms of treatment. Cases had also been treated that had not been subjected to other long-continued treatment. In the few cases of acne that he could recall, some were benefited and others were not. In one case in a young woman who was treated for six months with autogenous vaccines there was no appreciable improvement. She then returned to the ordinary methods of treatment and was relieved quite readily with the same remedies that had been tried without avail before she began vaccine therapy.

In the treatment of sycosis vulgaris, Dr. Corlett thought that the vaccines were especially indicated. He recently saw a case of this kind where he hesitated between the vaccine therapy and local measures. The patient was finally sent to the hospital and was treated by epilation and the constant application of a bichloride of mercury solution, and under this method of treatment, the sycosis practically disappeared within three weeks. That, he believed, was a better result than could have been obtained by the vaccine treatment.

In regard to pityriasis rosea, the speaker said that some years ago he made

a number of observations as to the length of time the disease would last without treatment, and he had found that its average duration was eight weeks. During the past winter he had seen quite a number of these cases—almost an epidemic—having had ten cases under his observation at one time. He did not think the disease had anything to do with syphilis, although it might, of course, occur in the course of syphilis. He had seen an example of this very recently.

DR. FORDYCE said that he was a believer in the future of vaccine and serum therapy, and he thought that the failures and poor results that had been reported were traceable to an imperfect knowledge of the technique. The collaboration of the clinician and the laboratory worker would doubtless result in improvements in this method of treatment.

Dr. Fordyce said he was particularly interested in Dr. Engman's case of extensive eczematoid dermatitis. He had seen quite a number of instances of this affection and had long recognized this type of dermatitis. Recently he had used vaccine therapy in a marked case of this kind, and from the results obtained he would feel justified in continuing its employment in similar cases, especially after listening to Dr. Engman's good results. The case he had in mind was one in which the eruption was very extensive, involving the breasts, axillæ, face, scalp and neck. The patient had been treated unsuccessfully for months by various methods, and was finally given a single injection of staphylococcal vaccine, which resulted in marked improvement in her condition.

In syrosis, the speaker said, autogenous and stock vaccines had been used with indifferent results, and local treatment with epilation was usually employed in conjunction. In chronic furunculosis, the vaccines had given him good results.

DR. HARTZELL said he quite agreed with some of the speakers that the evidence which was obtained by injecting these various bacillary mixtures in diseases like erythema multiforme and pityriasis rosea, which would have gotten well without any treatment, was of no value. To prove the value of these remedies, they must not be used in cases that were self-limited. Moreover, it was just as bad to prove too much as to prove too little. As he understood it, Dr. Gilchrist had employed the treatment in a case of ulcerating syphilitic derm, and the lesion had healed under this method. The speaker said he could not understand the theory by which a syphilitic lesion should be influenced by injections of the *staphylococcus albus*.

His own observation and experience with this method, Dr. Hartzell said, had not been very extensive. He had at present under his observation a case of very severe acne in which he had resorted to injections of the mixed organisms of the *staphylococcus aureus* and the *acne bacillus*. Marked improvement had been noted, but this had already begun under the usual methods of treatment. He had seen a number of cases in the hands of his colleagues where improvement had occurred, but not in a single instance to the extent of anything approaching a cure. Some had improved temporarily, but not in a single instance had a permanent cure been obtained, and in the majority, after a month or two, the condition was practically uninfluenced by this method.

Dr. Hartzell said he did not wish to be understood as denying the possible value of the use of these bacillary emulsions or mixtures. He believed that the principle underlying the method had a great deal in it, but we still had much to learn as to the technique, and so far as his own observation and experience went, the results thus far had been extremely unsatisfactory.

DR. WINFIELD said that two or three years ago he reported some cases of pemphigus and bullous erythema in which he had tried the autogenous vaccines. Under this treatment, the pemphigus apparently improved. Since then he had had two other cases in which there was no resulting benefit whatever. In the

case of bullous erythema the contents of the bullæ contained nothing but *staphylococcus albus*; the vaccine was injected in large doses, and the patient was remarkably benefited thereby. The patient, who had been delirious, soon became rational, and went on to rapid recovery.

Dr. Winfield said he had also used the vaccine treatment in general furunculosis, with marked improvement in every instance. He had had no results whatever from the treatment in syrosis, and since listening to Dr. Engman's paper he had come to the conclusion that the cause of the failure lay in the technique. In the future he would follow the plan of pulling out the hair, thus irritating the nodule and causing a flow of lymph, and see if the results were not better. He had never used the treatment in eczema, pityriasis nor psoriasis. He had now employed the treatment for three or four years, and his assistant at the Long Island College Hospital was very enthusiastic in regard to it, and had the history of a number of cases where apparently wonderful results had been obtained. One of these, which he expected to report later, was a case of dermatitis exfoliativa following a miscarriage, with subsequent pelvic trouble. When the patient came into the hospital, they were unable to make a diagnosis. The bacteriological examination invariably showed a pure culture of the bacillus coli communis. From this a vaccine was made, which was injected with marked improvement. The case ended fatally, but this was perhaps due to the fact that the vaccines were employed too late.

Dr. Winfield said he now had under observation a case of general tuberculosis of the skin where the physician in charge was giving the patient very minute doses of the old tuberculin, and under this treatment many of the lesions had disappeared and the child was apparently improving. The case was still under observation.

DR. POLLITZER said he had intended to keep his seat during this discussion, because it was a thankless task to take a skeptical attitude and an unpleasant one to offer hostile criticism to the three papers which presented the results of a great deal of work. He held, however, very much the same position on this subject as Drs. Hartzell and Stelwagon. Practically everything was still to be proven. His principal objection to the evidence presented by the readers of the papers was fundamental; they had not employed vaccine therapy in the sense in which this term was ordinarily used. By vaccine therapy was understood the introduction into the system of bacillary substances derived from the dead bodies of the organisms that produce the disease with the expectation of curing the disease by stimulating phagocytosis or opsonic activity. When one looked over the list of diseases from acne, furunculosis and eczema, through erythema bullosum, urticaria, pityriasis rosea, syphilis, etc., in which Dr. Gilchrist with most enviable optimism had reported cures or at least some improvement, one was struck with the fact that some of these diseases were bacillary in their origin and some not. To speak of opsonic or vaccine therapy in non-bacillary diseases, was to use this term, to say the least, in an unusual sense; and when one considered that of the diseases in this list that were of bacillary origin some were produced by one organism and some by another, and that the sole vaccine employed, except in the case of acne, was the *staphylococcus albus*, it was apparent that the dicta of Wright—which had been referred to—were not at all carried out. The authors might speak of their work as experiments in the treatment of various skin diseases with injections of dead *staphylococci*,—but to speak of these experiments as vaccine or opsonic therapy in the sense of Wright was manifestly a mistake.

Dr. Pollitzer said he would refrain from going into a discussion of the individual results reported by the readers of these three papers. He desired,

however, to refer to the fact that various writers had only two years ago reported cures of psoriasis by vaccine therapy—using the *staphylococcus albus*—a result which no one since that time has been able to obtain. The results recorded in the treatment of acne by injection of the bacillus *acnes*—a real vaccine therapy—were certainly very striking and merited further study. If the results were verified the work will have given us a valuable addition to our therapeutic resources in the treatment of this disease. If, on the other hand, the injection of *staphylococcus* in the numerous diseases in which the authors reported favorable results had any genuine effect on the disease, this effect might be sought possibly in some chemical action which was, however, very different from the effect theoretically produced by vaccines.

DR. PUSEY said it was extremely difficult to judge of the value of any therapeutic measure in the diseases to which the vaccine therapy was chiefly limited, and the great value of these papers lay in their collection of a large number of observations by expert, critical observers. In that way in the speaker's opinion, the papers were exceedingly valuable.

DR. PUSEY said that his own experience with vaccine therapy was limited to chronic, persistent dermatoses of frankly microbial origin, and in those conditions it corresponded closely to that of those who had spoken. He had been unable to decide definitely how much value to attach to the method, but he felt that we were still in that stage where a contribution based on every carefully observed experiment was useful, and where a full and free discussion on the subject was of great interest.

DR. CARMICHAEL said that his personal experience with the vaccine therapy was limited to a few cases, and largely to the use of the stock vaccines. He recently saw two very aggravated cases of sycosis in which there had been used the autogenous vaccines with not very favorable results. One of these patients had just returned from abroad, where he had been under the care of Sabouraud who had told him that one of the worst things he could do was to epilate. Sabouraud advised him strongly against epilation, and said that his own results with vaccine therapy in this affection had not been as favorable as had been reported in this country.

DR. SCHAMBERG thought the history of medicine gave ample evidence of the fact that the introduction of almost every new therapeutic procedure was attended by an exuberant degree of enthusiasm on the part of the early workers with such new agencies, and on the other hand, by an extreme degree of skepticism, often amounting to incredulity, on the part of passive observers and listeners.

This Association, DR. Schamberg said, was to be congratulated upon the selection of the essayists, and these gentlemen should be complimented upon the immense amount of work which they had accomplished, and which they had, in the main, sanely carried out and the results of which they had conservatively interpreted. Three or four years ago, the speaker said, he had had some experience with suspensions of certain microorganisms, and his results were embodied in a paper entitled "Bacterial Injections in the Treatment of Diseases of the Skin," which he presented jointly with his co-workers at the meeting of the Sixth International Dermatological Congress, in 1907. In the course of their work they obtained many indifferent results, many failures, but also a few successes which were absolutely brilliant. In one case of obstinate sycosis of nine months' duration, the lesions cleared up after two injections of a staphylococcal emulsion, and the man had remained well up to the present time, a period of over four years.

DR. Schamberg said he believed it was held to-day by those who used these

bacterial suspensions that there was no other method of treatment for furunculosis which was equal to this method in efficiency. In acne vulgaris, he had recently used a staphylo-acne bacterin, in which the so-called acne bacillus was grown under anaerobic conditions, and he was convinced that his results had been more satisfactory since he had combined the use of these injections with other methods of treatment than before.

It should not be demanded that vaccine therapy, in order to be accorded an established place in our system of therapeutics, should alone and of itself, cure the various conditions for which it is applied. It should merely be required that it effect results, alone or conjoined with other remedies, distinctly superior to those obtained by other means. As time went on, our successes and failures might be explained on the basis of the technique employed, of the strain of organisms utilized, the dosage, the frequency of the injections, etc. In closing, Dr. Schamberg said that he felt sure that the use of bacterial emulsions would have a permanent, although possibly, a limited place in the treatment of diseases of the skin.

DR. ORMSBY said the experience they had had with vaccine therapy had been well reviewed by Dr. Hyde. For the past few years they had used the staphylococcus albus stock vaccines in large doses and with rather disappointing results. More recently, however, they had carried on their work almost exclusively with the autogenous vaccines in smaller doses, and their results had been better, although they had not been as brilliant as they had hoped for. Occasionally, the result was brilliant, but frequently it was indefinite and in some instances it ended in absolute failure. The speaker said the point that had impressed him most strongly was this, namely, that with an improved technique there was no question about the value of the treatment. In acne their results a year ago had been very disappointing but the technique, as outlined by Dr. Engman, showed what could be done by careful work. In one case of general exfoliative dermatitis, similar to those reported by Dr. Engman, in which the eruption had its inception as pustular lesions on the foot, the patient was treated with the staphylococcus albus vaccines and made complete recovery in three weeks.

DR. RUGGLES said that his work with vaccine therapy was limited to the autogenous vaccines. In furunculosis, his results with the treatment had been good so far as subsidence of pustular lesions was concerned, but the underlying acne (comedones and oily skin) was little, if at all affected. He had used only staphylococcus vaccine. He had also treated two cases of syphilis by this method. In one of these, which was a very obstinate case of four years' duration, involving the upper lip, the patient improved rapidly until he neglected the treatment for two weeks when he had a relapse. In the second case, of seven months' duration, involving the whole beard but not the upper lip, the patient was practically free from lesions in half of the area affected in about a fortnight.

DR. HOWARD FOX said that his results with the vaccine therapy during the past year had been rather disappointing. From his own experience, which was limited, and from what he had learned from others, he had been led to the conclusion that vaccine therapy in dermatology had a very limited field. In furunculosis, his results with the staphylococcus vaccine had been fairly good, while in acne indurata they had been very disappointing. He had decided to discontinue the use of the staphylococcus albus vaccine in acne, and in future would substitute the bacillus acne vaccine. He thought the results which the readers of the papers had reported in acne were very brilliant.

DR. GILCHRIST said that personally, he always felt that he would like to read over carefully any paper which contained new work before attempting to criticise it. Of the 300 cases that he had reported in his paper, four had been selected

by some speakers for criticism. Of the four cases of pityriasis rosea where the vaccine had been used purely on experimental ground, one was improved by the treatment, two were unimproved and one was aggravated.

His paper simply gave the results of a large amount of experimental work in connection with vaccine therapy. The treatment was tried in skin eruptions of which the cause was known; it was tried in cases in which we thought we knew the cause, and, lastly, it was tried in cases in which we were entirely ignorant of the cause.

In the treatment of all these conditions, Dr. Gilchrist said, two definite objects were sought: First, to raise the resisting power of the individual by regulating the body functions by diet, fresh air, etc.; and, second, to find a specific treatment for the disease. Both of these phases of treatment were equally valuable. This was what was being done in the treatment of tuberculosis, where great attention was given to the diet, fresh air, etc., and a specific treatment was used in the shape of tuberculin, which, probably, when it was first introduced, did more damage than good, because the doses given were too large. Trudeau was the pioneer in the use of extremely small doses of tuberculin and then gradually increasing the dose as the patient improved. Tuberculin has proved to be an extremely valuable remedy in the treatment of tuberculosis patients when properly administered. It was well known that when a patient died from tuberculosis of the lungs he often died from streptococcaemia, yet the basal cause was the tubercle bacillus. This had been shown by Flexner years ago. Then they tried to treat the streptococcaemia, but not with very good success. It was along these lines that we were trying to work in the vaccine therapy of skin diseases. Vaccine therapy had come to stay.

Speaking of the bullous lesions of the skin, Dr. Gilchrist said they frequently revealed no organism whatever by any method of examination. Under those conditions what were we to do in bad, relapsing cases? We were at liberty then to use any remedy we could get hold of, that we thought would do these patients any good. In some cases of unknown aetiology it was thought that possibly the staphylococcus albus vaccine might give beneficial results, and it was used purely experimentally. The results in some cases were very interesting.

Speaking of the acne bacillus, Dr. Gilchrist said this organism was always present in acne nodules, and pure cultures had been obtained from these lesions. It was pathogenic in animals, and when large doses of bacillus acnes vaccine was inoculated into patients then fresh acne nodules would form. Therefore, logically small doses of the vaccine was the proper remedy to use in these cases. It was certainly better to go ahead and try it than to criticise it without ever having used it, and the speaker expressed the hope that those who seemed to be opposed to it would yet give it a trial. Dr. Engman in his paper had shown the great benefits to be derived from the use of the bacillus acnes vaccine in the treatment of acne vulgaris.

Replying to Drs. Hyde and Corlett, Dr. Gilchrist said he had made no statement that pityriasis rosea was produced by syphilis; he had simply made the statement that they had observed perhaps ten cases of pityriasis rosea patients who had had syphilis long ago. What relation pityriasis rosea bore to syphilis, or whether it bore any relation at all, he did not know. The Wassermann test would clear up that point. In the case of the ulcerating syphilitoderm which healed up under injections of the staphylococcus albus, to which Dr. Hartzell had referred, the vaccine was simply given because there was a severe secondary staphylococcal infection.

Dr. ENGMAN said that in discussing such subjects as this, we must remember that we were dealing with the great laws of immunity, of which, at the pres-

ent date, there was much to be learned. When Wright brought forth his opsonic theory, he made a great discovery, and out of that had come the vaccine theory, which opened many unexplored fields. The only way we could arrive at any conclusions regarding it was to experiment with the vaccines and bacterial suspensions in a large number of cases. Theoretically, the treatment should only be used in the cases from which the vaccines were grown. We should not employ too large doses, and we should endeavor to perfect our technique. The speaker thought we had arrived now at a technique which was satisfactory in many cases.

Some of the speakers had used the term metabolism. What did we mean by metabolism? No one could definitely answer that question at the present time. As dermatologists, and as physicians generally, we were apt to stick too closely to our own specialty and read only our own journals, neglecting the wonderful investigations that bore directly upon our own work going on in allied sciences.

While we did not know much about the great laws of immunity, it was fair to assume that in acne the individual had a lowered immunity to the acne bacillus, and it was along these lines that these investigations were being carried on. Of course, we would have failures, and some patients for some unexplained reason, had been found extremely sensitive to the action of the vaccines. In all of these cases we should have some control experiments, and the results of the investigations should not be clouded or complicated by using other methods of treatment at the same time.

As to the technique, that was the most important thing of all. Many failures were the result of our own faulty technique. No iron-clad rules could be laid down in following out this method of treatment. Each individual case must be carefully studied, and in the end we were bound to get results. The method should not be condemned on the results obtained in three or four cases and not until it had been studied in many cases along the lines of immunity as laid down by the biologists. The relapses were due to the underlying causes that produced all diseases. Vaccines could not be used carelessly, but required a carefully prepared technique.

LICHEN NITIDUS.*

By RICHARD L. SUTTON, M. D., Kansas City.

IN 1901, Pinkus described for the first time a peculiar papular disease of the skin, to which he gave the name "lichen nitidus."

The affection was characterized by the presence of numerous flat-topped, shiny, pinhead-sized papules, which exhibited no tendency to grouping and never became confluent. The lesions were somewhat pinkish in color, and of practically the same hue as the surrounding skin. Their presence gave rise to no subjective symptoms, and often were discovered only by accident. The favorite seat of the eruption was the genital region, although the abdomen, breast, and arms sometimes were attacked.

* Read before the Dermatological Section of the American Medical Association, St. Louis, June 9, 1910.

In a later and more exhaustive article, contributed to the *Neisser Festschrift*, Pinkus describes in detail the clinical and histopathological findings in nine cases of the affection.

Clinically, the eruption more nearly resembled that of lichen planus than of any other cutaneous disorder. The total absence of itching, however, together with the color and distribution of the papules, and the fact that they never increased in size nor coalesced, distinguished lichen nitidus from lichen planus. The shape, number, size, and topography of the lesions served to differentiate them from *verrucæ vulgares*. In lichen scrofulosorum the disease has its seat about the pilosebaceous follicles, the papules are darker than those of lichen nitidus, and scaling is a prominent feature. Lichen scrofulosorum is an affection of childhood and adolescence, while lichen nitidus is usually seen in adults.

Microscopically, Pinkus found the lesions to consist of hemispherical, granulomatous formations in the upper cutis, closely adherent to the epidermis, which was characteristically altered and greatly cornified. The granuloma resembled a tubercle. It consisted of a peripheral layer of round cells, with a centre of epithelial cells, including a considerable number of giant cells of the Langerhans type. The epithelial changes showed, especially in those lesions taken from the genital region, a central thickening of the rete, in the axis of which was a horny papilla, partly parakeratotic. This papilla was not constantly present, however. In the centre of the granuloma, a minute abscess was often found. The layer of cylindrical cells and the pigment were lacking on the under surface of the epidermis. The upper layers of the growth were displaced by a horny coagulum and red blood corpuscles. No bacteria were found. No tests were made with tuberculin. Although the disease did not respond very favorably to treatment, the eruption disappeared in some instances without medication of any kind and in others (the patient being a syphilitic) it faded, and even vanished completely, following the administration of mercury.

Recently, Arndt, working in Lesser's clinic in Berlin, has reported the findings and conclusions resulting from a careful and exhaustive study of twelve examples of the disease. In addition to these, Arndt describes a thirteenth, in a middle-aged male, which he saw and diagnosed at the hôpital St. Louis, in 1904, and likewise discusses Lewandowsky's and Jadassohn's cases.

Lewandowsky's patient was a male of fifty-one years, a syphilitic in the tertiary stage. The lichen nitidus lesions were on the back, arms and penis. Jadassohn's patient was a man, twenty-eight years old. The chest, back, legs, and penis were involved. In both of these cases the microscopical findings coincided with those described by Pinkus, with the single exception that the infiltration was localized around the ducts of the sweat glands.

Arndt's patients were all males, from twelve to forty-five years old (the average age being twenty-nine years), and of the twelve, six had had syphilis. In every case the shaft of the penis was the seat of a greater or less number of the characteristic, sharply defined, pinhead-sized, flat-topped, shiny, flesh-colored papules. In four instances other regions also were involved. In Case 12, a waiter, aged forty-five years, lesions were found on the buccal mucous membrane. All of the patients were ambulatory, and no tuberculin tests were made.

On microscopical examination, Arndt found that the changes were practically confined to the epidermis and the upper part of the corium. Surrounding the lesion, the rete cells were distinctly outlined, although somewhat separated from each other by the oedema. The prickle cell and horny layers showed nothing abnormal.

In the diseased area the basal cell layer was absent. The lesion was oval in shape, and the infiltration was more dense in the lower than in the upper portion of the growth. The under surface of the epidermis, which formed the covering, was either smoothly bowed or roughly regular in outline. In the centre was often an epithelial projection which dipped into the infiltrated area below, and was invaded by many leucocytes. No connection could be shown to exist between this prolongation and the sweat gland ducts. Around the lesion the lymph channels were much widened, and bordered by a reticular stratum. The peripheral portion was quite rich in capillaries (in some instances with widely dilated channels), which penetrated the growth but were lost toward the centre. Here and there, in the endothelium of these capillaries, were seen karyokinetic figures. Connective tissue was present only in fine reticulae, and an occasional bridge of collagenous tissue was found. No tubercle bacilli could be discovered, even with special stains. Peripherally, there were many darkly staining cells, among them giant cells with dark nuclei, and homogeneous or granular protoplasm. In the centre were a few small, intensely stained, more or less

regular, round nuclei, with little or no protoplasm. Only a few mast cells were seen.

Arndt concluded that the histological structure of the lesion was that of an infectious granuloma. In view of the fact, however, that all search for organisms has been without result the causative agent was yet to be found. He regards the condition as probably tuberculous in origin—an atypical tuberculosis of the skin, or a tuberculide. Although tubercle bacilli had not been found, further inoculation experiments (which had been tried only in one case, that of Kyrle) might prove positive.

Kyrle's case, which has recently been reported by Kyrle and McDonagh, was in a female, aged eighteen years. The regions affected were the flexor surfaces of the joints, the axillæ and the anterior axillary folds, the inguinal region and the genito-crural folds, the popliteal fossæ, and the malleolar surfaces. There were also a few lesions on the neck, thorax and abdomen, and the skin of the labia majora. The papules were typical in shape, size and color, and gave rise to no subjective symptoms. There was no glandular involvement, and a careful examination of the internal organs showed nothing abnormal. The patient had had the disease ever since she could remember, and no alterations nor periodical changes had ever occurred. An injection of one milligram of Koch's old tuberculin gave a rise of temperature from normal to 100.9° F., but without local effect on the eruption.

Histologically, the cells in the affected region were "partly conglomerated together and partly separated, the whole being sharply circumscribed. The cells are mostly epithelioid, with a few round cells interspersed, of the type of mononuclear leucocytes. These round cells lie in between the epithelioid cells, and are not arranged around the periphery. Giant cells of the Langerhans type are also present. In the centre of the cellular mass the connective tissue appears somewhat oedematous, and where the cells are widely separated coagulated oedematous masses are included. In the nodule no signs of caseation are to be seen." The nodule was ball shaped, and no processes were thrown out into the surrounding tissue. No elastic fibres could be found in the upper portion of the papule. The vessel walls were so thickened as to practically obliterate the lumen of the passage. The capillaries entered the granuloma at the lower pole, and extended to its centre. No capsule could be found. In the infiltrate were many epidermal cells which apparently

had been cut off as the growth developed. No tubercle bacilli were to be found. Animal experiments were negative.

These authors consider their case histologically identical with those reported by Pinkus, whose description of an individual lesion they quote as follows: "A small tubercle with its surface pressed against the epidermis and a tubercle in which no caseation occurs." They conclude that "The disease is a cutaneous lesion, probably brought about by a tuberculous toxin, and characterized by the formation of a granuloma devoid of the usual inflammatory changes."

In addition to the twenty-four cases of lichen nitidus that have been reported, I desire to place on record the clinical history and laboratory findings in an example of this disease which has been under my observation during the past four months.

PATIENT. E. G. G., male; railway passenger agent; aged thirty-five years; unmarried.

FAMILY HISTORY. His father died at sixty-one; cause unknown. His mother is living and well at the age of seventy-three. One brother died of pulmonary tuberculosis. Two brothers and two sisters are living, all in good health. The cutaneous history of the family is negative.

PERSONAL HISTORY. The patient's general health has always, with one or two exceptions, been excellent. He has had two attacks of gonorrhœa. In 1906 he was operated on, by a Chicago surgeon, for a suppurating tuberculous gland in the left cervical region. The wound healed in less than a month, and subsequently has given no trouble. He has never, so far as he knows, had syphilis.

PRESENT ILLNESS. The skin eruption was first noticed in November, 1909. It gave rise to no subjective symptoms, and its presence was discovered by accident. The patient does not know how long it has existed.

EXAMINATION. The patient is a large, broad-shouldered, well-nourished man, five feet and eleven inches tall, and weighs two hundred and five pounds. A careful physical examination fails to reveal any abnormal condition of the internal organs. On the left side of the neck is the scar left by the surgical operation, and there is still perceptible enlargement of the underlying glands. The subcutaneous structures elsewhere are apparently not involved. There is a decided reaction to tuberculin (von Pirquet). The Wassermann (Noguchi) test gives a negative result. The buccal mucous membrane is normal. On either side of the chest, just below the

anterior axillary fold, is an oval patch of flat-topped, shiny pin-head-sized papules. They are of the same color as the surrounding skin, and to the casual observer would pass unnoticed. In fact, the patient himself was unaware of their existence until his attention was called to them during the course of the examination. The tops of the lesions are smooth and burnished, and polygonal in outline. Their arrangement is irregular, and there is no tendency toward coalescence. All are of practically the same size, and there is no scaling nor crusting. The patch on the right side consists of twenty or more papules, and the one on the left of about thirty. Similar, but more extensive, areas are found in the groins, the patch on the right side being larger than that on the left. Surrounding the umbilicus is a ring-shaped group, made up of eighty or more lesions. Careful search fails to reveal any papules on either the penis or scrotum. The lower limbs are free. There is a small collection of papules on the upper, anterior surface of each forearm, forming an oval patch on the left, and an elongated area on the right limb. The flexor surfaces of the wrists are the sites of numerous papules (these were the ones first noticed by the patient). The arrangement is similar on the two sides, and there are between three hundred and three hundred and fifty lesions on each of the affected areas. The extensor surfaces of the thumbs also are involved. Speaking generally, the distribution of the eruption is roughly symmetrical, and very suggestive of that seen in some cases of lichen planus.

HISTOLOGY. For microscopical purposes, one of the papules on the flexor surface of the right wrist was excised, and, later, three other lesions were removed from the corresponding area on the left wrist. The tissue was fixed and hardened in alcohol, imbedded in paraffin, and serial sections made. For staining purposes, polychrome methylene blue (Unna-Pappenheim), haematoxylin-eosin, and carbol fuchsin were used, with Weigert's stain for the elastic tissue. Under the low power, the lesion appears as an oval, egg-shaped granuloma, lying between the corium and the epidermis, and having its long axis parallel with the line which normally separates these structures. In none of the growths examined was the affected area associated with, or in close proximity to, a pilosebaceous follicle or the duct of a coil gland. That portion of the epidermis which forms the roof of the lesion is composed of a somewhat thickened stratum corneum and several layers of compressed and flattened

nucleated cells from the stratum granulosum, the granuloma being closely pressed against the under surface of this shell. There is no central epithelial projection, such as was found by Pinkus and by Arndt in some of their cases. The interpapillary plugs, which form the outer boundaries of the lesion, are much longer than those in the neighboring unaffected regions, and are pressed outward in such a manner that the under surface of the epidermis covering the granuloma forms a long, smooth bow which extends from the tip of one process, over the end, top and opposite end of the growth, to the tip of the interpapillary process which bounds the other extremity.

Within the lesion, there are irregular masses of degenerated epithelioid cells (with poorly stained nuclei), and considerable numbers of small round cells with large, deeply stained nuclei. Two papules were sectioned in series. One contained two Langherans giant cells, the other three, all being found near the centres of the lesions. No evidences of caseation are apparent. An occasional slender reticulum of connective tissue is seen. The specimens stained for elastic tissue show no fibres in the central portion of the growth, but at one end, running along the periphery almost to the upper pole, several strands are plainly visible. This arrangement of elastic fibres, which has not been found by previous observers, is present in sections from both of the papules examined, although the sub-epidermal elastic fibres are much more plentiful in one than in the other. Their presence in this locality may be readily explained if one considers that the growth originated at the side of the tip of a papilla, and progressed in such a manner that some of the marginal elastic fibres were cut off by the advancing granuloma, and, being more resistant than the neighboring epidermal cells, were pushed upward and outward against the limiting wall. The fact that the interpapillary process at this end is much shorter than the opposite one—because of less irritation, and consequent stimulation, with succeeding cell proliferation—strongly favors this hypothesis.

The lesion itself consists, for the greater part, of degenerated and partly disintegrated epithelial cells, œdematosous masses of connective tissue, and many small round cells with deeply stained nuclei. In examining the latter, even under the high power, many of the nuclei appear to completely fill the cells, and little or no surrounding protoplasm can be seen. These round cells are irregularly

arranged, and appear to bear no fixed relation to the margin of the growth. In fact, some of the cells lie out in the cutis slightly beyond the edge of the granuloma. There are no signs of inflammation to be seen in the upper or lower corium. The elongated interpillary processes, which sharply limit the lesion at either extremity, are decidedly acanthotic. The blood vessels supplying the growth are apparent in only a few of the serial sections—those cut almost directly through the middle of the papule. These capillaries are widely dilated just before they leave the corium, a peculiarity which is partly explained when the course of the vessels is traced upward for a distance equivalent to about one-third of the diameter of the lesion. Immediately after crossing the rather indistinct dividing line, and entering the granuloma, the walls become much thicker—apparently a result of endovascular changes—and soon are blocked practically altogether.

Two of the excised papules were used for inoculation purposes. The bits of tissue, which had been excised under strictly aseptic precautions, were placed in sterile salt solution and ground up in a mortar. The resulting mixture was injected into the inguinal regions of two healthy guinea pigs. Up to the present time (six weeks having elapsed) the results are negative.

The effect of treatment in this case is of interest. At first the patient was given tonics (biochemic) internally, with a mixture containing menthol, thymol, chloral hydrate, chloroform, oil of eucalyptus, and alcohol for local use. Six weeks later, the eruption having remained practically unchanged, an ointment containing salicylic acid, resorcin, and vaseline was ordered, its use to be alternated with benzoinated zinc oxide ointment. Within less than one month the skin was practically free from the lesions. The patches on the right wrist and forearm were the last ones to show improvement, probably because of the inconvenience experienced by the patient in applying the remedy with his left hand. At present there is scarcely a trace of the eruption remaining.

It would be very interesting to examine some of the areas that were formerly affected, and it was with this object in view that several of the papules were carefully circumscribed with indelible ink prior to the beginning of treatment. The patient objects, however, to further biopsies.

My conclusions may be summarized as follows:

PLATE LXVII—To Illustrate Article by DR. RICHARD L. SUTTON.



FIG. 1.

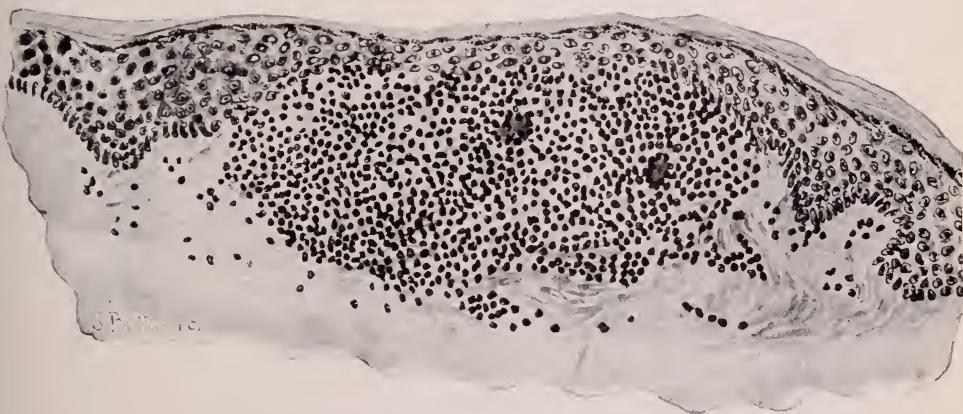


FIG. 2.

PLATE LXVIII—To Illustrate Article by DR. RICHARD L. SUTTON.



FIG. 3.

Lichen nitidus is a chronic, papular disease of the skin, probably tuberculous in origin, which is characterized by the presence of minute, painless, flat-topped, shiny, flesh-colored lesions which do not exhibit a tendency to grouping and never become confluent.

Histologically, the lesion is a granuloma (not a tubercle), which originates in the tip of a papilla and, as it gradually increases in size, follows the lines of least resistance and grows upward into the epidermis, shutting off and enclosing any projecting cell masses that may result from pressure or cell overgrowth.

I am deeply indebted to my associate, Dr. J. Phillip Kanoky, for the privilege of making this report. Dr. Kanoky considers the case an example of lichen scrofulosorum. My diagnosis of lichen nitidus has been concurred in by Dr. William Allen Pusey, of Chicago, who has seen the patient and examined the microscopical preparations, and by Dr. Charles J. White, of Boston, who was kind enough to write me regarding the sections, some of which were presented to him. I am also under many obligations to other of my friends for courtesies rendered, to Dr. O. L. Castle, Pathologist at the General Hospital; to Professor M. A. Barber, of the University of Kansas, and especially to Dr. W. K. Trimble, Professor of Pathology at the University of Kansas, for his kindness in performing the Noguchi test.

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JADASSOHN—Private case, cited by Arndt, (*loc. cit.*).
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610 Commerce Building.

A CASE OF DERMATITIS VEGETANS.

By D. KING SMITH, M. D., Toronto.

MR. J. B., fifty years of age, born in England, came to Canada about twenty-four years ago; since then he has carried on a coal business in Toronto. I saw him for the first time about the first of February of this year.

FAMILY HISTORY: There is nothing of importance in the family history that has any bearing on the case.

PREVIOUS HISTORY: His health previous to 1906 had always been good. He says he always perspired freely in the arm pits and around the genital organs.

In June, 1906, his mouth became very sore, causing difficulty in taking food. He noticed white "spots" and small ulcers in his mouth, at times "blisters" also formed; these would break, leaving a raw surface. The tongue became exceedingly tender, especially toward the posterior part. Two weeks after the mouth first began to trouble him some "blisters" appeared in the genital region, chiefly in the hairy parts; these broke and left a very irritable surface with a good deal of exudation.

For four weeks he was able to go about and attend to his business, then he had to take to his bed on account of the great tenderness of the genital region and general weakness caused by the inability to take sufficient food, due to the great soreness of his mouth. While resting, the condition in the region of the groins improved somewhat; the mouth continued about the same. The patient was troubled greatly with constant dribbling of saliva.

After being in bed a month, or about nine weeks from the appearance of the soreness of his mouth, "blisters" came out on the left wrist, on the front of the left forearm and soon over the body, with the exception of the face, although the scalp and back of the neck were affected. At the elbows, on the forearm and on other parts of the body, very large bullæ formed, the patient calling them "bladders." When the blebs broke the odor was most offensive. At the same time that the "blisters" were on the body "red rings" appeared on the chest and abdomen, these spread in an irregular manner covering quite a large surface of the body.

The nails of the hands and feet fell off; soon new ones grew and at the present time look quite normal. Crop after crop of vesicles kept coming out during a period of eleven weeks, then improvement began to set in until finally all the "blisters" disappeared and the patient was able to be up again.

In the groin vegetations formed and extended beyond the hairy region to the inner part of the thighs. During the attack just described the patient lost about forty pounds in weight. The tongue became greatly swollen and fissured.

At times the irritation was extreme; as the patient said, "He felt like tearing his skin off."

A month after improvement set in, the patient was entirely

free of all lesions. There were no sores in the mouth, but it was tender and he said this tenderness had never completely disappeared since the onset in 1906. The patient quickly put on weight and was able to resume his work.

During 1907 and 1908 he enjoyed good health with the exception of the tenderness of the mouth and irritation of the crotch; every now and then a few vesicles would appear in these regions; these would rupture and cause considerable discomfort. During the winter months the condition became aggravated, the mouth would be like the first attack but never as bad, while in the genital region vegetations formed.

During the height of his condition in 1906, at a consultation, the diagnosis of erythema bullosum was made.

The patient no doubt used the word "blister" as meaning a vesicle and "bladder" a bulla, as he is an intelligent man and gave me a clear description of the sizes he meant by these terms.

PRESENT ILLNESS: About the first of December, 1909, the soreness of the mouth became so bad that it was almost impossible for the patient to take food of any kind; he has lost between 30 and 40 lbs. of weight. The temperature was about 100° and the pulse 120. Except for the general weakness the condition was good; as the patient says himself, "If he could only eat a good meal he would be fit." From the middle of January to the middle of February he was practically confined to his bed on account of the general weakness and soreness in the genital region.

February 8th: On inspection of the mouth the mucous membrane is white and detached in many places, leaving very angry-looking superficial ulcers. The tongue is almost of a purplish color and presents many small fissures. The patient is continually expelling saliva and mucus which has a most offensive odor. At times pus is also present. There is a marked pyorrhœa alveolaris of the lower jaw.

About the genital region there is a very large patch of vegetations extending backward to the sides of the anus, with a seropurulent exudate having an exceedingly offensive odor and very tender. It has taken two months to acquire the size as illustrated in the accompanying photograph.

During the past two weeks vegetations have developed at the umbilicus.

Several times lately a few pustules have been observed near

the border of the vegetations, they soon dry up, a scab forms and from them develops a little vegetation. The large patch has a somewhat serpiginous outline.

BLOOD EXAMINATION:

Red-blood corpuscles per cubic millimetre, 5,232,000.
Leucocytes, 15,000.
Hæmoglobin, 100%.

DIFFERENTIAL COUNT OF LEUCOCYTES:

Small mononuclears, 45%.
Large mononuclears and transitionals, 3%.
Polymorphonuclears, 51%.
Eosinophiles, 1%.
Myelocytes, none.

BACTERIOLOGICAL EXAMINATION OF THE BLOOD showed a pure culture of the staphylococcus pyogenes albus.

URINALYSIS: A little higher specific gravity than normal, otherwise normal.

BACTERIOLOGICAL EXAMINATION OF THE PUSTULES showed the presence of the staphylococcus pyogenes albus.

WASSERMANN TEST: Negative.

TREATMENT: As marked pyorrhœa alveolaris of the lower jaw was present, the affected teeth were extracted. Irrigation of the mouth with a weak permanganate of potash solution was carried out for several hours a day. The vegetations were dusted with a powder composed of equal parts of orthoform and aristol. In a very few days the mouth began to improve, the vegetations became dry, the temperature and pulse became normal and the patient felt much improved generally. At the end of the first week after beginning treatment he was able to partake of some solid food with very little inconvenience. The condition of the mouth was greatly improved and there were no ulcers present; here and there small areas of congestion were noticed; the entire mucous membrane had a whitish appearance; and there was no actual pain, only the sensation of tenderness. The patient was now put on a tonic of iron, quinine and strychnine; in ten days from the commencement of the treatment he was able to be up, take a short walk and gaining in weight rapidly.

PLATE LXIX—To Illustrate Article by DR. D. KING SMITH.



SCROFULODERMA AND ROENTGEN RAY.

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As soon as the vegetations became dry, spreading ceased, and they commenced to disappear rapidly.

The case presents many interesting features and a train of symptoms quite unique. Taking into consideration all the symptoms and lesions of the past four years, I almost ventured to put it in the category of dermatitis herpetiformis, on account of the vesicular and bullous nature of the lesions during the first attack, the great irritation, and the occasional appearance of vesicles in the mouth and groins during the last two years. Again, it somewhat corresponded to the case of Hallopeau and Brodier, in which the nails were shed and vegetations formed. On the other hand, the lesions did not have the grouping of dermatitis herpetiformis, the blood did not show an increase of eosinophiles. Pyorrhœa alveolaris has always been a marked symptom, but by the removal of the teeth and irrigation of the mouth, in a very short time there was great improvement. I therefore present the case as one of dermatitis vegetans on account of the condition presented since he came under my care. The vegetations I look upon as due to secondary infection with pus organisms. The condition of the mouth I consider as due to the pyorrhœa alveolaris, and that the symptoms and lesions somewhat resembling dermatitis herpetiformis can be accounted for by septic infection from the mouth primarily due to the pyorrhœa alveolaris. Again, the bacteriological examination of the blood during the last attack showed the presence of the staphylococcus pyogenes albus, showing that the condition was due to sepsis and it is reasonable to think that the sepsis was from the mouth.

REFERENCE.

CROCKER: *Diseases of the Skin.*

22 Wellesly Street.

A CASE OF SCROFULODERMA TREATED WITH THE ROENTGEN RAY.

By ALFRED G. NADLER, M. D., New Haven, Conn.

THEO. C., aged seven, was referred to me in April, 1908, by Dr. Francis H. Reilly of New Haven.

Dr. Reilly's notes are as follows:

"This boy was brought to me March 15, 1908, with a tumor under the right angle of the jaw which had been growing

for about nine months. Recently it has grown rather rapidly. At present there is a mass as large as a tennis ball occupying the space between the lower jaw and the occiput, with a chain of glands extending down under the clavicle anteriorly and posteriorly to the sterno-cleido-mastoid muscle. The skin over the centre of the mass is bluish black with an area of fluctuation as large as an English walnut. The growth has been painless.

"The operation which seemed imperative was done on March 18, 1908.

"That portion of the tumor surrounding the fluctuating area was first removed. After three hours of continuous dissection of enlarged nodes, another large mass, measuring perhaps two by three inches, was found higher up, behind and under the angle of the jaw and under the origin of the sterno-cleido-mastoid muscle. Owing to the condition of the boy, much weakened by the shock of the operation and the loss of blood, it was decided to postpone the remaining work to a second operation. There was a good recovery, the wound healing by first intention throughout, except where a drain had been left.

"The second operation occurred April 16, 1908.

"The mass now approximated three by five inches and had extended upward under the scalp almost to the level of the external auditory canal. The incision revealed a mass showing the characteristics of a sarcoma. All the tissues were infiltrated; blood vessels were prevalent. No favorable point at which to attack the mass was found although the incision was extended in either direction. Portions of the tumor were removed for examination and the wound closed.

"The microscope showed, on one side of the mass, broken down tuberculous gland tissue and on the other a round celled infiltration resembling sarcoma."

I first saw this boy on April 27, 1908. At that time there was a figure-of-eight ulcer, each loop about as large as a silver dollar, below the right angle of the inferior maxillary bone. The floor was covered with exuberant granulations resembling tubercles; the border slightly raised with an irregular outline. The whole bled readily. Covering the upper loop was a flap of skin, unattached below and on the sides. When this was raised one could see the bleeding mass described by Dr. Reilly extending up behind the auditory canal. All the surrounding tissues were deeply

infiltrated. Behind, the tumor extended beyond the border of the hair and above the lobe of the ear, which stood out about at right angles to the head. Anteriorly, there was a swelling along the inferior maxillary bone from the ear to the point of the chin and stretching upward under the cheek almost to the eye. Below, the infiltration extended to the clavicle.

My diagnosis was scrofuloderma and I recommended X-ray treatment.

The first exposure was made on April 27th. From then until July 8th there were fourteen treatments. Nothing was applied to the diseased area except a boric acid cleansing solution. On the latter date the ulcer was entirely covered. The infiltration and swelling were all gone. The skin was soft. There remained only an irregular jagged scar.

On February 6, 1909, the boy returned with a large hypertrophied scar extending over the site of the original ulcer and bulging outward to the level of the angle of the jaw. About fifteen X-ray exposures were given until July, at which time the mass was very much smaller and the hypertrophy rapidly disappearing. In January, 1910, there remained a deposit about as large as a bean. Two more exposures were given. At present nothing is to be seen except a crooked, linear scar without elevation above the surrounding surface.

This case illustrates the value of the Roentgen ray in malignant diseases otherwise inoperable and its effect on hypertrophic deposits. It also shows that the radiation continues to produce effects long after the treatments are discontinued.

SOCIETY TRANSACTIONS

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, March 22, 1910.

DR. SAMUEL SHERWELL, President.

Melanoma (?). Presented by DR. KINGSBURY.

The patient was a school girl, eleven years of age. She was first seen at Dr. Bulkley's clinic about nine months ago, at which time there was a small pigmented nævus on the right side of the nose. The case was referred to a surgeon for operation, and it was thought at the time that the growth was entirely removed. It reappeared, however, several months later, and since then had been gradually increasing in size. When presented, the lesion was nodular, of a dark-brown color, and was about three-eighths of an inch in diameter.

DR. JOHNSTON thought it was not a melanoma but an angioma hypertrophicum, of which one of the most prominent characteristics was its tendency to recur. The child was rather young for a melanoma. The lesion was situated exactly where one would expect to find angioma hypertrophicum—along a line of suture. Before any surgical action was attempted, it would be well to have a histological examination made. If it proved to be angioma hypertrophicum, the best treatment would be the solid carbon dioxide.

DR. BULKLEY said that it did not strike him as melanoma, and that he had never heard of a case of melanoma in quite so young a person as this.

DR. JOHNSTON said that some years ago he had reported in THE JOURNAL, the case of a child who had had a number of these lesions which projected above the surface, and which returned after several surgical procedures. Histologically, it was a true angioma, but there was more in the picture than the ordinary cavernous type. The cells were like those seen in certain types of endothelioma. It was called hypertrophic on account of its clinical aspect—the lesions projecting above the surface of the skin.

DR. SHERWELL said that it seemed to correspond somewhat to the angioma circumscriptum.

DR. KINGSBURY said that he had hardly thought it was a case of melanoma and had wished to have a diagnosis from the members of the Society. It was of interest to him mainly on account of its recurrence after it had apparently been entirely removed.

Alopecia Areata or Syphilitic Alopecia? Presented by DR. HOWARD FOX.

The patient was a boy seventeen years of age, born in Russia. About four weeks ago he had suddenly noticed four bald patches upon the scalp. These had been promptly shaved by a barber with the hope of effecting a cure. A few days later other patches appeared over the entire scalp. He gave no history of syphilis and indeed denied any prev-

ious venereal infection. He also denied having recently taken any medicine.

On examination there were seen upon the vertex and parietal regions of the scalp, four perfectly round, bald areas varying in size from a five-cent-piece to a quarter. They were non-inflammatory and smooth and presented a black, dotted surface. The hairs were not easily removed by traction. There was a slight hyperæmia of the fauces and there was a single posterior occipital gland to be felt. There was no cicatrix upon the penis. The inguinal glands were not enlarged. There was a pediculosis of the pubic and axillary hairs and there were well-marked maculæ ceruleæ upon the lateral aspects of the abdomen. The general health seemed excellent. The Wassermann test was negative.

DR. TRIMBLE said that when the patient had presented himself at the Skin and Cancer Hospital, they had first taken into consideration the fact that it might possibly be a form of ringworm, such as was sometimes seen in young children. But after realizing the patient's age, not finding any spores, and in view of the fact that the Wassermann test was negative, it was decided to be a case of alopecia areata.

DR. HOLDER said that if syphilis were excluded it must be a case of alopecia areata.

DR. WHITEHOUSE asked if the man had had any mercury, and was told that he claimed to have had no treatment. The Doctor then said that he would not like to make a diagnosis from the general appearance, but it seemed to him to be a syphilitic alopecia. The anterior and post-auricular glands were somewhat enlarged. Of course the negative Wassermann test was against syphilis. He however might have taken some treatment.

DR. WINFIELD said that it looked more like alopecia syphilitica than areata, and the history given by such patients was often unreliable. He thought the therapeutic test would be the best means of determining the diagnosis.

DR. BULKLEY said that the hair came out in patches, just as it did in syphilitic alopecia, and that he had never seen a case of alopecia areata develop so rapidly and with so many spots. He had seen a great many cases of alopecia areata with partly cleared areas, but the whole moth-eaten picture was so characteristic, that with the glands it certainly suggested syphilis. The man might have taken mercury unknown to himself, and that was probably the cause of the negative Wassermann reaction.

DR. BRONSON said that at first glance the case suggested parasitic disease, but apparently that had been excluded. It did not seem to him to correspond to a syphilitic alopecia. In syphilis there was more of an irregular thinning, especially at the sides (the so-called moth-eaten appearance), and he did not recall any case of syphilitic alopecia which presented such definitely outlined, round, bald spots over the surface as this case did. In the absence of trichomycosis, it would seem to come nearer to alopecia areata than anything else.

DR. JACKSON said that the case presented the appearance rather of syphilitic alopecia than of alopecia areata. The patches were very angular and irregular in shape for the latter disease. That the Wassermann test was negative was of course in favor of alopecia areata, but the patient's statement in regard to his history might not be reliable, and he might have taken sufficient anti-syphilitic treatment to negative the test.

DR. SCHWARTZ was inclined to agree with the diagnosis of syphilitic alopecia.

DR. KINGSBURY thought it a case of syphilitic alopecia, notwithstanding the negative result of the Wassermann test.

DR. SHERWELL said that in spite of the opinion of the majority he was inclined to agree with Dr. Bronson on the subject. He had seen similar cases, and like Dr. Bronson, could not see the peculiar characteristics of syphilis; the hairs were, as a rule, thinner and were not so apparently healthy around the borders in specific cases. He would hold to this opinion until the patient had been put on a therapeutic test, as was proposed; very rapid recovery would of course be diagnostic.

DR. HOWARD FOX said that in his opinion the diagnosis could only be settled by the institution of vigorous anti-syphilitic treatment. Assuming the case to be one of syphilis the Wassermann reaction might well have been negative from the effect of treatment. As the patient had denied any initial lesion he might also have denied having taken mercury. If the case were one of alopecia areata it was certainly an unusual form of the disease. On the other hand the patches seemed larger than those usually seen in the moth-eaten form of syphilitic alopecia. The patient would be put upon anti-syphilitic treatment and the result would be reported at a subsequent meeting.

Tuberculous Lesion of the Tongue (?). Presented by DR. TRIMBLE.

This case was shown at the last meeting, in connection with the photograph of a case of tuberculous lesion of the tongue. Very careful examinations and the various tests had been made, but it had not been possible to definitely determine the diagnosis. The biopsy seemed to favor tuberculosis rather more than syphilis. The patient had some pulmonary condition, the left lung being slightly affected, but some of the physicians said that the same diffuse condition was found in some syphilitic cases. He had had every imaginable form of specific treatment, with absolutely no benefit. The condition was about the same as when presented last month. Dr. Trimble also presented a colored photograph of the case.

DR. BULKLEY said that the edges of the lesion seemed to be distinctly tuberculous rather than syphilitic. It was rolled over, just as in cases of tuberculosis of the tongue.

Pigmentation on the Neck. Presented by DR. TRIMBLE.

The young woman, a patient from Dr. Fox's clinic had a discolored patch on her neck, apparently a pigmentation, about one by two and a half inches in area, which had been there from five to six years. It was rather difficult to see it well by artificial light. It had the appearance of being the result of X-ray treatment, although the patient said she had never been subjected to Roentgen therapy.

DR. BRONSON said that it seemed to correspond to morphœa—to what used to be known as morphœa nigra. Though there was some telangiectasis, the usual lilac border of the disease was lacking. But the thickening and discoloration were characteristic.

DR. WHITEHOUSE agreed with Dr. Bronson, and thought it seemed to be the result of some previous lesion. He thought he noticed some evidences of atrophy, which were very suggestive of circumscribed scleroderma.

Erythema Multiforme and Dermatitis Herpetiformis. Presented by DR. TRIMBLE.

The patient had been shown at a previous meeting of the Society. She came from Dr. Fordyce's clinic at Bellevue. The lesions on the face were apparently erythema multiforme. She was shown previously on account of the peculiar scarring on the back. Some of the members at that time thought that the scarring was probably the result of scratching. The diagnosis of dermatitis herpetiformis had been made, but the condition on the face, which seemed to be erythema multiforme, would disappear at times, and then break out again. She said she had had this condition, appearing and disappearing, for over a year.

DR. BULKLEY thought it a straight case of dermatitis herpetiformis, but would not give any name to the lesions on the face. They were more or less circular and more or less of the same physiognomy as seen in certain parts of the body. The scars on the back were the result of scratching, which produced the large lesions.

DR. WINFIELD agreed with Dr. Bulkley.

DR. JOHNSTON said that the individual lesions were discrete, round-topped papules, with an election for the sites of papular urticaria rather than dermatitis herpetiformis. The lesions on the face were gyrate in character, and more allied to urticaria. In erythematous, herpetiform dermatitis there was an erythema and not a wheal. The diagnosis would probably be determined by a simple blood test. If eosinophilia were found the diagnosis would incline to dermatitis herpetiformis if not, the diagnosis of papular urticaria would be probable.

DR. SHERWELL said that there was evidently an erythema multiforme on the face, which was a first cousin to urticaria and he, therefore, agreed in part with Dr. Johnston.

DR. TRIMBLE said that he had not presented the case especially on account of the dermatitis. The patient had been under observation at the clinic for quite a while, and continued in about the same condition, although at times the lesions were more active than now. She had presented herself for the condition on the face which would disappear and then recur, and she was shown to the Society mainly for this facial condition. In reference to the lesions on the body he said the diagnosis of dermatitis herpetiformis was made on account of the grouping of the lesions on the back, the location, the pigmented lesions, the punctate scarring, the history of seven or eight years' duration, and recurring attacks. The case was first presented to learn whether the members thought the peculiar scarring on the back was an accompaniment of the dermatitis or an independent condition. He would have a blood examination made and report the case at the next meeting, as to whether or not an eosinophilia was present.

PRESENTATION OF PHOTOGRAPHS AND REPORTS OF CASES.**Raynaud's Disease.** Presented at a previous meeting by DR. SHERWELL.

Dr. Sherwell said that the patient was steadily improving under anti-syphilitic remedies, and he thought she would continue to do well.

Onychogryphosis. Presented at a previous meeting by DR. HOWARD FOX.

Dr. Fox said that the Wassermann test had been performed and was negative.

Dermatitis Herpetiformis Bullosa. Presented at a previous meeting by DR. HOWARD FOX.

Dr. Fox said that the patient was not improving.

Epithelioma of the Nose. Presented at a previous meeting by DR. SHERWELL.

Dr. Sherwell said that the scab had fallen off and the eye was a little turned in, but otherwise the patient was apparently doing very well.

Case for Diagnosis. Presented at a previous meeting by DR. HOWARD FOX.

Dr. Fox reported upon a case that had been presented before the Society on three previous occasions. The patient had been shown at first by Dr. G. H. Fox as a possible case of lupus erythematosus. At a subsequent meeting some of the members considered the case to be one of syphilis. Among other possible diagnoses that were suggested, were leprosy, acne indurata and some form of tuberculide. The patient was a woman, thirty-five years of age, presenting bluish-red, nodular lesions of the face, ears and shoulders. There had never been any subjective symptoms and no ulceration nor evidence of necrosis. A very slight amount of scaling had been noticed when the patient was first observed. A histological examination had been kindly made by Dr. Udo J. Wile. This showed a focal infiltration of the subcutaneous tissue and deeper layers of the corium, consisting mainly of lymphoid cells, a moderate number of giant cells, epitheloid cells, and mast cells were also present. The infiltration was chiefly about the sweat coils and had no relation to the pilo-sebaceous follicles. There was no evidence of degeneration nor necrosis. A diagnosis of the subcutaneous type of sarcoid tumors described by Darier was made.

Morphea. Reported by DR. WHITEHOUSE.

Dr. Whitehouse said that a private patient, a young woman, had a symmetrical morphea in the centre of both cheeks; on one it was the size of a quarter-dollar; on the other a little smaller. They had been in place for eight or nine months. The patches apparently occurred spontaneously. He had never seen circumscribed scleroderma in that location, and it was a rather unique case.

Paraffin Prosthesis. Reported by DR. JACKSON.

Dr. Jackson inquired whether any one had any suggestions to make about the removal of paraffin deposits under the skin. He had seen two cases of bad results from such injections, causing marked deformity. In one case an attempt had been made to remove the substance, but the result was not good. The suggestion had been made to him that heat might be applied to the deposits and when softened the fluid drawn off. He was inclined to doubt the success of such a procedure.

DR. SHERWELL said that he had seen such cases, one of whom had been treated at the Woodbury Institute. The condition was very peculiar and he thought of bringing it before the Society for diagnosis, when the woman confessed that she had had a paraffin injection to remove the wrinkles around the mouth. The paraffin had coalesced into one or two big nodules.

DR. WINFIELD said that the only satisfactory treatment was to use surgical measures. If the operation were properly done the scarring was very slight, and anyway if there were a resultant scar it was far better than the disfiguring nodes.

DR. McMURTRY said that before any treatment was attempted it would be well to ascertain the melting point of the paraffin which had been injected. Its use was begun at the Rudolf Hospital in Vienna in 1904, for the correction of saddle nose. If paraffin of 43 degrees melting point had been used it might be possible by hot applications to melt or soften the substance and express it through a small puncture. In this manner the unsightly mass might be removed easily and without the production of a disfiguring scar.

Pityriasis Rubra Pilaris (Photograph). Presented by DR. JACKSON.

Dr. Jackson showed a large photograph of the case of this disease that he presented last month, that was taken by Dr. Fox twelve years ago when she had had her first attack. No one would doubt the diagnosis of the disease shown in the photograph. Last month some were inclined to doubt the diagnosis when the patient was shown. Since then the case had gone on to fuller development, and a great number of small acuminated, scale-tipped lesions had appeared over the body.

REVIEW
of
DERMATOLOGY AND SYPHILIS.

Under the charge of George M. MacKee, M. D.

TREATMENT OF SYPHILIS.

By FAXTON E. GARDNER, M. D., New York.

On the Treatment of Syphilis with Ehrlich's New Arsenical Preparation.
SCHREIBER and HOPPE, *München med. Wchnschr.*, July 5, 1910,
No. 27, pp. 1430-1432.

The authors have treated one hundred and fifty cases of recent syphilis. The pain varies considerably; it depends on how rapidly the injection has been made and its proximity to a nerve. The pain usually lasts several hours and a dull sensation persists much longer. The authors keep their patient in bed four days, even when the pains subside. Care must be taken not to inject into a vein and not to let any of the injection get into the subcutaneous tissue. No abscesses have been noted, but there is, at times, some infiltration in the muscles.

The drawbacks of the intramuscular method led Schreiber and Hoppe to use intravenous injections. These are painless. In their thirty cases, the writers have seen no untoward effects. And intravenous injections give a much more accurate dosage. In the muscle, an inflammatory reaction is produced around the injection, so that much of the arsenic remains in the buttocks. This inflammatory reaction explains the fever, generally moderate, exceptionally high, that may be exhibited. The authors have not seen any bad effects on the kidneys: in one case, "606" cured a haemorrhagic nephritis: no injurious influence on metabolism was noted. Twice, arsenical exanthems appeared ten days after the injection.

The curative effects are remarkable. If the Herxheimer reaction appears, it means that the dose has been too small. Out of 52 cases with a positive Wassermann reaction before the treatment, 44 (84.6%) were negative 50 days after the treatment; and 4 more later on. In most cases, the reaction becomes negative two weeks after the injection; sometimes earlier, while at times, only after 70 days. This difference is probably due to a variation in absorption. A favorable influence of "606" on the metabolism of lecithins was noted. A few days after the injection, there appears a moderate leucocytosis. Arsenic is found in the urine about five days after the treatment in cases of recent syphilis, later in paretic patients. After intravenous injections, the elimination is ended in four days. The arsenic is also partly eliminated by the intestines.

tines. "606" does not produce methæmoglobin, and has no chemical influence on haemolysis. The number of patients treated in Uchtspringe was about 300.

With the smaller doses, one cannot expect to cure the disease with a single injection. With the higher doses, however, 0.6 to 0.7 gram, recurrences have not been seen. Serious lesions of the heart, circulatory system, kidneys and eyes, cachexia and serious general diseases are contraindications.

The Behavior of the New Ehrlich Preparation in the Human Body.

FISCHER and HOPPE, *München. med. Wchnschr.*, July 19, 1910, No. 29, pp. 1531-1532.

In paretic patients, about one-half of the injected arsenic is eliminated through the urine in from 12 to 14 days after a subcutaneous injection. In epileptics with sound kidneys, the elimination never extends beyond 5 days. The elimination is complete in 4 days after an intravenous injection. Therefore, after intramuscular injections, "606" is eliminated much slower than atoxyl or arsacetin, while after intravenous injections, it is eliminated just as quickly as the other arsenical compounds. The rectal administration of "606" is not associated with much absorption. The arsenic is also partly eliminated through the intestines, but this is less important.

The examination of the gluteal muscles of patients dying of intercurrent affections, shows that after 14 days there is still a great quantity of arsenic; and after thirty-six days a sufficient amount to be easily detected. The arsenic disappears from the blood at about the same time as from the urine. The combination formed by the arsenic in the living body is not the same as that formed artificially with blood in vitro.

Has the Intravenous Injection of "606" Any Special Dangers? EHRLICH, *München. med. Wchnschr.*, Aug. 30, 1910, No. 35, p. 1826.

Fränkel and Grouven have published a case of death after an intravenous injection of "606." But the autopsy revealed an advanced degeneration of the central nervous system. Ehrlich does not accept, therefore, the idea that the intravenous injection is particularly dangerous. Those cases with advanced lesions of the nervous system form a special class by themselves. In two similar cases, death followed, one after a subcutaneous, and the other following an intramuscular injection. On the other hand, an intravenous injection of 0.45 gram, has really recalled to life a patient treated by Scholtz, who was so emaciated that the intramuscular injection was not to be thought of.

Ehrlich commends Iversen's suggestion namely, to follow an intravenous injection by an intramuscular one within 48 hours. The intravenous injection kills the greater part of the spirochætae; then the intramuscular treatment continues the favorable action of the drug for a longer period.

Unexpected Results in a Hereditary Syphilitic Nursling After Treatment of the Mother with "606." R. DUHOT, *München. med. Wchnschr.*, Aug. 30, 1910, No. 35, pp. 1825-1826.

The patient was a woman who had a very bad case of tertiary syphilis despite mercurial treatment. She was nursing a syphilitic baby who was covered from head to foot with a papular eruption, and not taking on any weight. Two injections of "606" not only cured the mother but also the baby, who began to take on weight very rapidly. This is probably explained by antitoxins in the milk. As soon as the child becomes strong enough it, also, will have to receive "606" directly.

Studies with Ehrlich's Paradiaminodioxyarsenobenzol Dihydrochloride.

H. LOEB, *München. med. Wchnschr.*, July 26, 1910, No. 30, pp. 1580-1581.

Loeb treated thirty-eight cases from April to July. The first three must not be taken into account, because the author was too timid in his technique. The injections were all given deeply into the gluteal muscles. The pain was very moderate at the time of injection. On the second or third day some tenderness and infiltration appeared; regression begins after five or eight days. There were no abscesses. There was in one case, a very extensive red infiltration, but in that case a large part of the injection had spread into the subcutaneous connective tissue. The temperature rises to 98.2° or 100°, once to 103°. Generally there was a very slight febrile reaction soon after the injection and two or three days later a strong rise. The first is due to the absorption of the injected material, the second to the formation of the infiltration. Toxic phenomena were not observed. Herxheimer's reaction was exceedingly marked at times, but did not show when the higher doses were used. The curative action was always exceedingly rapid. There was a recurrence in one case that had been treated by an intravenous injection of a small dose (14 cg.). On the 17th day, after marked improvement, the symptoms reappeared; a little albumin and many cylinders were found in the urine. The patient had had yellow fever in 1906, and had been in poor condition since. In another patient, in wretched condition, 0.2 gram produced, in nine days, a wonderful improvement, which potassium iodide kept permanent. "606" does not contraindicate in any way, a subsequent mercurial or iodide treatment, and vice versa. The Wassermann reaction was little influenced, but not enough time has elapsed to make this observation of value. "606" is more powerful against syphilis than any hitherto known agent; and probably not only against the spirochaetæ, but against all spirilla. Loeb has cured successfully with "606" a case of verruca plana and one of lichen simplex.

Arsenobenzol in Syphilis. B. SPIETHOFF, *München. med. Wchnschr.*, Aug. 30, 1910. No. 35, pp. 1822-1825.

Spiethoff has treated 50 cases, all with success: 6 primaries, 16

florid secondaries, 10 latent secondaries, 10 tertiaries, 1 hereditary, 3 tabes, 1 pernicious anaemia, and 1 severe secondary syphilitic anaemia.

The injection was always intragluteal, given on one side only. The solution was made in hot water according to the formula of Michaelis. Results were always quick and remarkably good. In two there was a particularly rapid regression of the secondary generalized adenopathy. The spirochætae always disappeared in a few weeks, especially after a dose of 0.6 gram. The subjective and objective results of the injections varied very much according to individuals. In a patient with a weak nervous system, an epileptic fit occurred. In a tabetic patient, there was a temporary blindness for ten minutes. Sometimes, when the injection was given to the patient in the standing position, dizziness was observed. In no case was methyl alcohol used.

Fever and tachycardia were observed at times. The tachycardia subsided as soon as the patients reclined. As a rule, twelve hours after the injection, there is a leucocytosis, which is produced, whatever the nature of the injection, solution or emulsion, with or without methyl alcohol. There was no injury to the kidneys. After the injection there is an immediate rise in the temperature which is of short duration, then after two or three days there is another rise which is due to the inflammatory reaction around the injection. There was a fatal result in a patient having a very narrow stricture of the pharynx, numerous gummata in the liver, and a hypoplasia of the heart and the aorta. High doses cannot be given to any patient. In doubtful cases, when organic degeneration is present, one should begin with a medium dose.

A Preliminary Report on the Ehrlich-Hata Preparation For the Cure of Syphilis. M. S. KAKELS, *Med. Rec.*, Sept. 24, 1910, Vol. 78, No. 13, pp. 517-518.

Kakels injected 0.3 gram of "606" according to the Michaelis method, in a case of very large inoperable gumma of the liver, and never saw a pathological mass melt away so rapidly. Also the same dose in a case of extremely severe ulcerative syphilis which was refractory to mercury even in heroic doses, to atoxyl and to arsacetin. "606" proved here a life saver.

The Arsenical Treatment of Syphilis. JOHN B. MURPHY, *Jour. Am. Med. Assn.*, Sept. 24, 1910, lv., No. 13, pp. 1113-1114.

Murphy reviews, summarily, the general results, as found in the literature from treatment with "606." As the latter will not be in general use for some time, he advises, in the meantime, treatment with sodium cacodylate, two to four grains, which he says has a similar action. He quotes three cases where there was a rapid improvement, and disappearance of the spirochætae.

The Treatment of Syphilis with Ehrlich's "606." HENRY J. NICHOLS,

M. D., and JOHN A. FORDYCE, M. D., New York. *Jour. Am. Med. Assn.*, Oct. 1, 1910, lv., No. 14, pp. 1171-1178.

The writers were the first in America to use Ehrlich's paradiaminodioxyarsenobenzol dihydrochloride. They recall the years of work of Ehrlich in experimental chemotherapy, in quest of a substance that would prove parasitotropic without being organotropic, that is, a substance that would have a chemical (and fatal) affinity for the protoplasm of parasites without having any affinity for the protoplasm of the cells of the host.

More than 600 synthetic products of substitution were tested thoroughly. A few proved valuable in the treatment of diseases caused by spirochætæ and trypanosomes. "606" is one of the latest, which bids fair to revolutionize the treatment of syphilis.

The drug, stable only as a bichloride salt, is injected as a neutral or alkaline solution prepared just at the time of injection, either in the muscles or directly into the veins, or under the skin. The dose is from 0.45 to 0.6 gram. The authors have treated fourteen cases of rebellious lesions. The improvement was, in all cases, such as has never been seen under the influence of mercury or other drugs. Cases not responding to mercury did respond to "606," and the serum reaction became rapidly negative in 11 out of 14 cases. There were three recurrences.

BOOK REVIEWS

Die Syphilis der Unschuldigen (Syphilis Insontium), von Dr. OSCAR SCHEUER.
Urban und Schwarzenberg, Berlin and Vienna, 1910, 239 pages.

The book is one of the most exhaustive studies devoted to that ever interesting question. The first chapter is devoted to the origin and history of syphilis. The second one gives a general idea of syphilis, and studies the micro-organism and the bearers of the contagion. Then come the study of extra-genital chancres, how they are acquired, how they develop; where located. Last, the prognosis of extragenital syphilis is exposed. It is exactly the same as that of lues acquired in the regular way.

The last one hundred pages are filled with a tabulation of reported cases and references. The total number of cases mentioned is 4,090, irrespective of those published before 1896 and of the 1,124 published by Fournier. The completeness and accuracy of the bibliography will make the book invaluable to syphiliographers.

F. E. G.

Die Vergleichende Pathologie der Haut, von Dr. JULIUS HELLER, Charlottenburg, Privatdozent an der Universität Berlin. Mit 170 Abbildungen im Text und 17 Tafeln. Berlin, 1910. Verlag von August Hirschwald.

The author of this book, heretofore best known by his monograph on the diseases of the nails, has tried to broaden scientific dermatology by a presentation of the comparative pathology of the skin. The opening of this new field of study seemed justified, because only a sufficient knowledge of the idiopathic skin diseases of the animals will allow us to interpret experimentally produced affections and to come near the demonstration of the general laws of pathology. Since the older works on general comparative pathology do not do justice to the demands of modern scientific dermatology, the author has tried, from the standpoint of the dermatologist, to select from the wide fields of veterinary medicine and zoölogy all those facts the knowledge of which is now or will in the future in some way become of importance to the doctrine of human skin diseases. Hence it was necessary to consider the ætiology, pathology and clinical description, and to a certain extent the bacteriology of animal dermatoses and of those general diseases which produce important symptoms on the skin.

The book is the result of nine years of work, including the study of the original contributions to the literature of the world, or regular attendance for years at the polyclinic for small domestic animals of the Berlin Veterinary College, of visits to other clinics, to zoölogical gardens, etc. Particular attention has been given to the pathological anatomy of animal skin diseases, and about 250 specimens were obtained, partly for personal examination. It is a surprise to be told that it is quite difficult to obtain pathological material from the skin of animals, partly on account of the commercial value of the skins. In the exploration of the material all the methods of modern dermato-histology were applied, but more attention was given to the delineation of the pathological structure than to the too minute study of cellular detail. This principle was particularly adhered to in the production of the 17 plates of photomicrographs. The results of experimental general pathology were duly considered and enriched by some personal experiments of the author; modern investigations of syphilis and cancer have been described. The text illustra-

tions, partly taken from Schindelka's Handbook of the Skin Diseases of Animals and from other books, are of particular interest where similar affections in men and in animals are placed next to each other.

The book begins with a brief chapter on the comparative anatomy of the skin in general and of some of the domestic animals: the horse, cattle, sheep, goat, pig, dog, cat and rabbit. With some slight deviations the structure of the animal skin throughout resembles that of the human skin. Then some general laws of comparative biology and physiology are considered; for instance, the relations of the weight of the newborn to that of the mother, the duration of youth in different animals, heredity of acquired conditions, hereditary transmission of color, the law of Mendel, etc.

The bulk of the book is taken up by the clinical material. While this is almost exclusively restricted to a comparison of the pathology of the human skin with that of the domestic animals, principally of the domestic mammalia, it consists of an enormous number of observations from the literature or from the author's personal experience, together with some original experimental work. It was not easy to properly and systematically arrange this material. Considering that the human skin was the object of comparison, the logical division of the pathological conditions found in animals would have been into:

(1) Affections which occur in man as well as in animals and which are transferable from the single animal species to others. (2) Affections which occur both in man and in animals without being transferable from one species to the other. (3) Affections which occur in man, can be experimentally produced in animals but do not appear spontaneously in the latter. (4) Affections which occur exclusively in animals.

For practical reasons such an arrangement had to be abandoned and the author finally decided to follow the division adopted by Jarisch in his handbook of skin diseases, considering the clinical character rather than the ætiological one. The comparison of the various affections is largely based on the demonstration of clinical and anatomical facts; numerous pictures of cases of diseases in animals have been introduced, often with excellent features for comparison. To properly review such a large collection of clinical material is impossible; it must suffice to point out the prominently interesting parts.

Among the inflammations not caused by microörganisms we find erythema, combustion and congelation, gangræne, necrosis ulcers, and inflammations due to the effects of light (gangræne of white spots or marks), erythema solare, experimental effects of sunlight, X-rays and radium. The exudative dermatoses include the hæmorrhagic ones (*morbus maculosus* in horses, scurvy in swine) and the œdematoses diseases, particularly urticaria, which shows much resemblance, clinically and ætiologically, to human urticaria.

Dermatoses due to intoxication form an important chapter. Drug exanthemata from external more than from internal use are not uncommon, those from mercury are frequent, but of more interest are the autointoxications mostly brought on by the ingestion of improper food, not always depending on individual disposition, but often favored by external conditions (sunlight), appearing in very different degrees from erythema to necrosis. Buckwheat, potatoes, and brewery swill are among the more common causes; special reference is made to ergotism and pellagra-like conditions.

Itching is the most common and most easily demonstrable one among the disturbances of sensibility; parasites are its most frequent cause and actually idiopathic pruritus is very rare. Zoster is not met with in animals, but herpes has been observed in the horse; trophoneuroses furnish some interesting observations, clinical and experimental.

Pemphigus and other bullous diseases of unknown origin are not more common in animals than in man. Psoriasiform and lichenoid affections are hardly known in animals, but eczematous dermatoses are frequent and in many ways resemble those in man. They are found only in domestic animals and seem to depend on a certain individual disposition. External factors, similar to those causing eczema in man, but more often autointoxications and other internal causes are responsible for eczema, while the author does not find the parasitic origin in the sense of Unna supported by the facts. The horse and the dog are more often affected with eczema than cattle, sheep and pigs; a number of original observations of the author make this chapter particularly interesting.

A much larger space than in books on human dermatology is devoted to the diseases produced by vegetable and animal parasites; some are quite familiar from a study of human dermatology: impetigo, acne, comedo, pyemic dermatitis, phlegmon, furuncle, carbuncle, erysipelas, parasitic wound infection, all due to staphylococci and streptococci. Among the bacillary diseases, anthrax, œdema malignum, hog erysipelas, equinia and blastomycosis are primarily animal diseases; tuberculosis, although frequent in cattle, rarely affects the skin. Here again we find a number of the author's valuable observations. Affections caused by the ray fungi (actinomycosis, botryomycosis) show similarity in man and animals. The most interesting among the hyphomycotic affections is trichophytia, because we have become much better acquainted with the interchangeable infections between man and the animals; a number of parallel pictures illustrate the similarity of superficial and deep forms of the disease in the human and animal individual.

Infectious diseases of unknown or doubtful origin are measles and scarlatina, the distemper of dogs and influenza of horses (Staupe), foot and mouth diseases (Klauenseuche) and small-pox.

The animal parasites play a much more important part in the pathology of the skin of animals than in that of man, and therefore occupy considerable space. The most important ones are the diseases caused by the different species of sarcoptes (mange, Räude), their description in general and in the special forms as found in the various animals is enriched by numerous personal observations of the author. Affections caused by demodex, ixiodidæ (ticks) and other stationary and temporary parasites (lice, fleas, mosquitoes, etc.) are considered next, and the chapter on parasites closes with the filaria and cysticercus species.

Occupying over 120 pages, the tumor-like hypertrophies and benign and malignant tumors form probably the most interesting and most important chapter; here we meet with analogous lesions of almost every variety, including ichthyosis, warts, molluscum contagiosum etc. Experimental investigations, to a large extent the author's personal work, are particularly considered. It is natural that affections of the hair are frequent and of importance in animals; they form the next group together with anomalies of pigmentation, diseases of the horns, nails and hoofs. After a few remarks on tropical diseases, the clinical part closes with the description of the sexual diseases and of experimental gonorrhœa, ulcer molle and syphilis. An extensive bibliography has found a place at the end.

One hardly expects to find an entirely new field of science developed into a perfect discipline in a book which is the pioneer in this field, and the author himself calls attention to its shortcomings. But he certainly deserves praise and thanks for all the work he has devoted to the book. It is full of interesting detail to which a review cannot do justice and certainly fulfills the author's promise to make accessible to dermatology the rich treasures which

the scientific veterinary medicine has unearthed already and to point out others which still await discovery. He hopes that in the future every clinical teacher, every scientifically working dermatologist, every skin specialist who endeavors to widen his education, will take notice of the wide field of skin diseases in animals and will recognize that a fully developed and fully authorized sister discipline may widen and deepen his own knowledge.

H. G. K.

OBITUARY.

JAMES NEVINS HYDE.

IN MEMORIAM.

DR. JAMES NEVINS HYDE was born at Norwich, Conn., June 21, 1840. His preliminary education was obtained at Andover (Phillips Academy), his university training at Yale, where he received the degree of A.B. in 1861 and the degree of A.M. in 1865. He received the degree of M.D. from the Medical Department of the University of Pennsylvania in 1869 and an *ad eundem* degree in medicine from Rush Medical College in 1879.

He was one of the pioneers in his chosen specialty, dermatology, in America. He began as Lecturer on Dermatology in Rush Medical College in 1873, a position he held for three years. From 1876 to 1878 he was Professor of Dermatology in the Northwestern University, and in 1879 was elected Professor of Skin, Genito-Urinary and Venereal Diseases in Rush Medical College, a position he held continuously for thirty-one years, up to the time of his death. His name has been prominently connected with American Dermatology since his entrance into this field, in 1873. He has been identified with the American Dermatological Association since its organization and has twice been honored with its presidency, first in 1881 and again in 1896. He has always taken pride in this Association and has been an ardent worker for its continuance and success. He attended its meetings with regularity, presented a paper on scientific subjects almost every year, served on important committees, presented statistical reports, and in every way did all he could to promote its welfare. That he enjoyed the association of the members of this scientific body, no one doubts, and that the members individually and collectively will miss him has been eloquently made manifest by the tribute paid him in personal letters received by his associates and members of his family during the past few weeks.

At the time of his death, Dr. Hyde was Professor and Head of the Department of Skin, Genito-Urinary and Venereal Diseases in Rush Medical College, Professorial Lecturer on Dermatology at the University of Chicago, Secretary of the Council of Administration and of the Faculty of Rush Medical College.

He was a member of the American Medical and American Dermatological Associations; of the Congress of American Physicians and Surgeons; of the Chicago Medical, Chicago Pathological and Chicago Dermatological Societies; of the Illinois State Medical Society; and of the Society of Medical History of Chicago; corresponding member of the Société Française de Dermatologie et de Syphiligraphie; corresponding member of the Wiener Dermatologische Gesellschaft; and corresponding member of the Berlin Dermatologische Gesellschaft; and honorary member of the Societa Italiana di Dermatologia e Sifilografia.

He was attending Dermatologist to the Presbyterian, Michael Reese, Augustana and Children's Memorial Hospitals and the Orphan Asylum of the City of Chicago.

Other society memberships included the Sons of the American Revolution, Society of Colonial Wars, and the Society of Mayflower Descendants. He was a member of the University, Literary, Onwentsia, and Saddle and Cycle Clubs of Chicago.

He married Alice Louise Griswold of Chicago, July 31, 1872. Two sons have blessed this happy union. One son, Charles Cheney Hyde, is Attorney-at-Law and Professor of International Law at Northwestern University. In January, 1909, James Nevins Hyde, Jr., was born. The keen pleasure and happiness given Dr. Hyde, during the short period allotted him for it, watching the development of this treasured namesake, was the crowning glory of his long and happy domestic life.

Dr. Hyde began the study of medicine with Dr. William H. Draper in the College of Physicians and Surgeons in New York in 1861. During the war and afterward, for a period of six years all told, he served as Assistant and Passed-Assistant Surgeon of the Navy. He performed heroic duty toward the end of the war in the battle waged against yellow fever off Key West, Florida. During this time his two superior medical officers succumbed to the disease and left him as medical officer in charge, though only a young man. So well did he perform this duty that he was rewarded with a special letter of praise by the Secretary of the Navy, and later was commissioned by President Lincoln to make that memorable voyage under command of Admiral Farragut on the *Ticonderoga* to various European ports and through the Mediterranean. "Every officer on this voyage was a picked man who had won distinction in the struggle for the Union."

Dr. Hyde's record as a contributor of written articles on scientific dermatology is one of which we are all proud. His treatise on diseases of the skin, published first in 1883, underwent eight complete revisions and grew from a modest volume containing five hundred and sixty pages in the text, with sixty-six illustrations, to a volume of eleven hundred pages in the text, with two hundred and twenty illus-

trations, and fifty-eight full-page plates in the eighth edition, published in 1909. This work was classical and typical of its author. It was scientific, always contained the more advanced thought on the subject and, as has been said by one of his colleagues, was an index to the advancement of the science of dermatology throughout the last twenty-six years.

In addition to this monumental work covering the entire field of dermatology, his contributions of special articles amounted in number to much more than a hundred, and he always spent much time, labor and money in making these complete both in the way of literature references, personal research and photographic illustration. This latter fact was well illustrated within the present year in two articles, one on pellagra, the other on sporotrichosis. That his enthusiasm in working out a subject was appreciated by his associates was well shown in May, when he presented his last article on sporotrichosis before the Dermatological Section of the Congress of Physicians and Surgeons held in Washington. The thoroughness with which every phase of this subject was worked out was commented upon by all. Dr. Hyde presented many papers before the Chicago Literary Club on topics outside of medicine and was once honored with the presidency of that organization. He also contributed many literary articles that were read on special occasions. At a banquet given General Sheridan on the fiftieth anniversary of his birthday, Dr. Hyde read a classical article entitled "Asleep and Awake." Another classic he has left us is entitled "Historical Strawberries." Another volume of great value is his "Early Medical Chicago," an historical work of note.

As a public-spirited citizen in the commonwealth in which he resided, Dr. Hyde was always identified with any movement instituted for the betterment of the social and economic problems arising in a great city. He was a member of the Vice Commission, a recent organization instituted to meet the needs of certain social problems at present confronting the public.

As a lecturer and teacher, Dr. Hyde held an unrivalled position. He was held in the highest esteem and personal regard by hundreds of physicians throughout the middle and entire West who have had the privilege of receiving his instruction.

His dermatological clinic at Rush Medical College was famous. During the many years he held it, his regular and punctual attendance was a notable achievement for so busy a man. His kind and courteous treatment of the patients of the class that attend public clinics was an inspiration to the hundreds of physicians and students who for thirty-one years were instructed there. No opportunity was ever lost by Dr. Hyde to make useful men as well as skillful physicians

of the students receiving his instruction. That he was successful is shown by the positions held to-day by his students. Wherever they are now located they almost uniformly hold honorable positions both as physicians and citizens in their respective locations.

Words cannot express the feelings of sadness and of great personal loss aroused in the hearts of his associates in the Faculty of the College. As Secretary of the Board of Administration and of the Faculty for years, he has been closely identified with everything affecting the policies and, with that, the destinies of the institution. Every movement suggested for the advancement of the College to place it in the front ranks among institutions striving to maintain high ideals for imparting medical instruction had his loyal and heartfelt support. During his long professorship he had the pleasure of seeing the requirements for graduation advance from a period of two sessions, each of five months' duration, with practically no preliminary educational pre-requisites, to the present standard. To-day a high school diploma and two years of university training are required before admission, and four full years of nine months each are necessary before a matriculate can apply for graduation.

As a practitioner of medicine, Dr. Hyde's influence extended from one end of the continent to the other. His great strength of character, charming personality and personal magnetism bound his legion of patients to him to a degree not commonly appreciated. The great good accomplished by him not only in relieving their physical ills but in directing their future lives is a matter of such magnitude that its far-reaching consequences can only be partly told.

From the standpoint of time, Dr. Hyde lived many years and at the time of his death had rounded out the three-score and ten years allotted to man, yet in mental and physical vigor he was still a young man and his marvelous intellect was as keen and bright as it had been at any period of his life.

The high honor of being closely associated with such a man is the greatest that could be bestowed upon any one. His high ideals, his pure-minded life, his gracious thoughtfulness for all who were near to him, and the daily example of his noble life, leave an heritage that no worldly price can buy.

O. S. O.

FILIPP JOSEF PICK.

DR. F. J. PICK, professor of dermatology at the German University of Prague, Austria, died on June 3, 1910, at the age of 76 years. Throughout his long and active life he was regarded everywhere as one of the leaders in dermatology. One of the early pupils of Hebra, he found no provision for instruction in dermatology at the university

in his native city on his return to Prague in 1866. It was through his energy and through the excellence of his methods as a teacher that Prague became in later years a centre of dermatological teaching. And Prof. Pick himself enjoyed the distinction of filling the first full professorship in dermatology to be established (1896) in Austria.

He was a born teacher, a fluent and clear speaker and a ready and powerful debater. While his aggressive nature made him an opponent to be feared, his innate, kindly spirit raised for him a host of friends and admirers. In his death one of the last links that connect the present with the remote days of Hebra is broken.

From the long list of his contributions to dermatology we can mention only a few of the most important. He was the first to demonstrate by experimental inoculation the identity of mouse and human favus. He successfully maintained against Kaposi and the Vienna school the distinction between pityriasis rosea and herpes tonsurans, and in a notable discussion at the Copenhagen Congress in 1884, virtually compelled the recognition of the tuberculous nature of lupus vulgaris. We owe to him the first experimental demonstration by inoculation of the contagiousness of molluscum epitheliale. His studies of urticaria pigmentosa, of xeroderma pigmentosum, and of acne frontalis and varioliformis materially advanced our knowledge of these subjects. In the field of therapeutics, also, his work was of the greatest value. We owe to him the use of the salicylic acid soap-plaster and the gelatine varnishes.

His greatest work, however, the work to which he devoted most of his time and energy, the work which always seemed dearest to his heart, was his editorship of the *Archiv für Dermatologie und Syphilis*, of which he and Auspitz were joint founders, and he, since 1886, the chief editor. The *Archiv*, which has grown under his guidance from its modest beginning to its present position of dignity and importance, may well be regarded as his worthy monument.

S. P.

RESOLUTIONS.

RESOLUTIONS OF RESPECT TO THE MEMORY OF DR. JAMES NEVINS HYDE, BY THE CHICAGO DERMATOLOGICAL SOCIETY.

It is with profound sorrow that the Chicago Dermatological Society hears of the removal by death of our beloved member, Dr. James Nevins Hyde. Dr. Hyde was one of the nestors of dermatology in the United States. He was the founder of this Society and during his life contributed more than any other member toward its success. His voluminous contributions in the field of dermatology are recognized as standards of authority in all lands. As a teacher

OBITUARY.

he was unexcelled. He was a public-spirited citizen and gave freely his time and talents—always for the betterment of the community. His charming personality endeared him to all who came in contact with him.—Therefore:

Be it resolved—that in the death of Dr. James Nevins Hyde this Society has suffered an irreparable loss; the medical profession has lost a great teacher and the community a model citizen.—And furthermore:

Be it resolved—that the above minute be spread upon the records of the Society, that a copy be transmitted to the family of the deceased, and that it be published in THE JOURNAL and also in the *Journal of the American Medical Association.*

DAVID LIEBERTHAL, M. D., President,

RUFUS W. BISHOP, M. D.,

WILLIAM L. BAUM, M. D.,

Committee.

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THE NATURE OF EYELID XANTHOMA.* †

By S. POLLITZER, M. D., New York.

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AT a meeting of the American Dermatological Association in 1897, I presented the results of studies on the nature of the xanthomata. I undertook to show that on clinical as well as histological grounds there was good reason for separating the localized xanthoma planum palpebrarum, which I shall hereafter call xanthelasma,¹ from the generalized form, xanthoma tuberosum. Addison and Gull, who first called attention to these conditions in 1850, under the uncouth name of vitiligoidea, found both the plane palpebral and the generalized tuberose form in the same patient and concluded that the two forms were identical. For nearly fifty years this view of the identity of the two processes remained almost unquestioned, and to-day is still taught in the text-books on histopathology and dermatology. Unna,² in 1894, was the first to declare explicitly that the two diseases histologically were in no way related, and that the fatty bodies in xanthelasma were simply deposits of a peculiar fatty substance between the muscular and collagenous bundles into which naked endothelial nuclei had escaped, giving on cross-section the picture of fatty cells containing many nuclei.

This ingenious theory of Unna's has the one great merit of clearly recognizing the fact that the so-called "xanthoma cell" in xanthelasma is not a cell at all. My own paper on this subject,

* Published simultaneously in the *Festschrift* for PROF. P. G. UNNA.

† Read at the Annual Meeting of the Association of American Pathologists and Bacteriologists, Washington, D. C., May 3-5th, 1910.

¹ This name from xanthos-yellow and elasma-lamina was proposed by Erasmus Wilson as a substitute for the older term vitiligoidea.

² Guy's Hospital Reports.

perhaps on account of its unwise publication in a local New York medical journal, has generally escaped the attention of the writers of text-books who have made only the most casual reference to it or have ignored it entirely; and yet the clinical differences alone between xanthoma tuberosum and xanthelasma are so marked that the persistence in considering the two conditions as mere formal differences of the same process, constituted to my mind a fine example of that tendency to "follow your leader" characteristic of so much of our medical work.

The nodules of generalized xanthoma are yellow or yellowish-red, firm, round, elevated papules of an average size of five millimetres; at times they attain larger dimensions and may have an elevation of one or two centimetres above the surrounding skin and are then usually mushroom in shape. They occur usually in groups aggregated about the large joints—elbows, knees, and hips—and scattered over the trunk, and even in severe cases are rarely found on the face. They develop rather rapidly and once established persist for many years—except in the diabetic form in which the duration may be measured by months—but ultimately they are absorbed and disappear. The disease appears most frequently in youth and early adult life and seems to stand in aetiological connection with some systemic disturbance in which disorders of the liver play a rôle; jaundice or diabetes is almost invariably noted in the history of these cases.

The patches of xanthelasma occur as yellow discolorations of the skin on the eyelids—rarely in other parts of the face and neck—hardly or not at all raised above the adjacent surface, and to the touch are not to be distinguished from the soft neighboring tissue. A single patch, usually near the inner canthus of one eye, first makes its appearance and may or may not be followed in the course of years by other patches near the outer canthus and on both lids of both eyes. The patches extend slowly in the direction of the long fibres of the orbicularis, and occasionally cases may be seen in which both eyes are entirely encircled with sharply limited chamois-leather plates of xanthelasma. I have seen one very severe case in which a similar discoloration occurred over a large area on the outer and anterior aspect of the neck below the jaw. The patches and striae of xanthoma planum that are sometimes seen under the dense horny layer of the fingers and palms are always associated with xanthoma tuberosum and have the same structure as the nodules of that disease.¹

¹ Histopathologie der Hautkrankheiten, Berlin, 1894.

Xanthelasma develops generally at or after the middle period of life.¹ Once established the patches never disappear and are carried to the grave. Aside from the slight disfigurement, it occasions no discomfort and its victims seldom seek medical advice about it.

Xanthoma belongs to the rarest of skin diseases. During the past twenty years, among some sixty thousand cases of skin diseases at the German Hospital Dispensary, there has not been a single case. In Crocker's statistics in London, there was no case among ten thousand skin diseases. Xanthelasma is quite common. You will find one or more examples of it in every large gathering of middle-aged people. If the two conditions were identical and the eyelids in so preponderating a degree the seat of predilection of the disease, surely in every case of the generalized process the lids would be affected, but this is not at all the case. The association of the two forms in the same individual is the greatest exception.

On clinical grounds alone there appears to me no reason for associating these two diseases, an approximate similarity in color being their only point in common.

Under the microscope a single glance will suffice to show that the two conditions are totally different, and that here again there is only one point of resemblance, to wit, the presence of a large amount of fatty substance within or apparently within cells. I shall not occupy your time with a description of the histology of xanthoma tuberosum. It has been very well described a number of times, and all recent writers are agreed that in it we have a neoplasm made up of connective tissue or endothelial cells, which more or less rapidly undergo fatty degeneration; whether this neoplasm is due to heterotopic fat cells, as Török believes, or to an irritative hyperplastic connective tissue cell growth, as I believe, is aside from the purpose of this paper. I propose here to discuss the nature of xanthelasma without wasting time over what is as clear as anything in pathology—that the two processes are entirely different.

A glance at the picture presented in a section from a well-developed case of xanthelasma shows all the elements of the skin, epidermis, cutis, hair follicles, and glands entirely normal in appearance; but the greater part of the cutis is literally filled with the peculiar cell-like masses and bodies known as "xanthoma cells." This circumstance—the great amount of apparently new tissue in the cutis—has never been properly considered in its relation to the ab-

¹ Whitehouse and Johnston, *Jour. Cut. Dis.*, 1904, xxii., p. 470.

sence of any clinical evidence of tumor. When we consider that the small amount of infiltration in the eyelid present in a slight follicular inflammation—a hordeolum—or even the insignificant aggregation of epithelial cells in milium produces a distinctly palpable and visible tumor, is it not remarkable that the extensive infiltration in xanthelasma does not raise the epidermis at all above its normal level, and can not be distinguished by the palpating finger? Do not these facts strongly suggest the conclusion that this new tissue is not something added to the preexisting normal tissues, but is present rather at the expense of some normal structures which it replaces? In other words are we not dealing with a degeneration of preexisting tissues rather than with a new growth?

A study of sections of xanthelasma shows that this theoretical deduction from the clinical data is correct and the so-called "xanthoma cell" of xanthelasma to be the fragmented and degenerated remains of muscle fibres with proliferated sarcolemma nuclei.

Let us look for a moment at the normal anatomy of the orbicularis palpebrarum muscle. Like all the cutaneous face muscles its fibres are not enclosed in an aponeurosis. The greater portion of them lie in a well-defined layer separated from the epidermis by a thin elastic layer of cutis; but there are numerous single fibres and bundles of fibres scattered quite irregularly throughout the cutis, and they are often seen lying directly under the epidermis. At the inner canthus some of the fibres sweep around from one lid to the other, while some pass upward to the corrugator supercilii, and some pass downward and outward to merge with the general muscular layer of the face. From the inner canthus, furthermore, Horner's muscle passes inward beneath the circular fibres of the orbicularis. It is evident that in this complex arrangement, fibres may readily come to occupy irregular or atypical localities in the cutis proper, and it is probably these outlying fibres which first undergo the degeneration manifested clinically as xanthelasma. It is at the canthi, especially at the inner canthus, that the first patches of xanthelasma appear. This explanation of the origin of xanthelasma makes clear the common occurrence of the disease in isolated patches located often symmetrically at the outer and inner canthi of each eye. Indeed this location alone, it seems to me, requires an explanation which no theory of independent tumor growth can supply.

In the past fifteen years I have examined not less than twenty specimens of xanthelasma, making hundreds of sections, and I have

not failed in any specimen to find evidences of the correctness of the view that the so-called "xanthoma cells" are degenerated muscle fibres. In long-standing and stationary cases these evidences may be slight, but in specimens from recent and still progressing cases, especially in sections taken from the borders of the patches, the pictures seem to me clear and convincing. In the first place it must be said that the "xanthelasma cells" are unlike any other cells. The smaller "cells" show a reticulated structure filled with a granulo-fatty mass with one or more round or oval, deeply staining nuclei. They resemble most nearly the cells of the sebaceous glands, but unlike these cells the fat never runs together to make a single large drop. Furthermore, the fat in xanthelasma has many peculiarities which distinguish it from ordinary fat of fatty infiltration or degeneration. In the larger "cells" of the older specimens there is often no sign of any cell structure at all, the "cell" consisting of a homogeneous granulo-fatty mass within which there may be one or many nuclei lying without any definite arrangement in the mass. Some of these large masses—so-called giant-cells of xanthoma—have an irregular outline and look as if they were made up by the coalescence of several smaller masses. Adjacent "cells" often show a thread-like fragment of tissue that partly separates them. The "cells" lie frequently in groups of the size of a muscle fasciculus and are separated from each other by a connective tissue stroma, which exactly reproduces the appearance of the sarcolemma of a muscle bundle. With the Van Gieson stain in alcohol specimens this resemblance is striking. Occasionally a single well-preserved muscle fibre may be seen in the midst of a group of "xanthoma cells"; again one or more "xanthoma cells" of the exact size and shape of the surrounding muscle fibres in cross-section may be seen in the midst of an isolated muscle bundle; and again a group of "xanthoma cells" may be seen surrounded by a single interrupted layer of muscle fibres, the whole group giving the exact appearance that would be presented by a muscle bundle whose interior fibres had been replaced by "xanthoma cells." In other sections cut longitudinally, that is, parallel to the course of the orbicularis fibres of the lid, we find "xanthoma cells," or sometimes granulo-fatty masses having no cellular structure, lying in bands paralleling the neighboring muscle fibres.

These pictures might be explained as resulting from the invasion of muscle bundles by "xanthoma cells" which have pushed their way in between the muscle fibres. But the "xanthoma cell"

is not an invading cell, it shows no tendency to push itself into any other tissues at their expense; it does not spread into the epidermis nor show any tendency to leave the small area of the skin to which it is always limited.

Unna, whose sharp eyes did not fail to notice certain changes in the muscles in xanthelasma, explains these changes, to which he ascribes little importance, in these words: "If the xanthoma is deeply extirpated we see it extending between the muscle bundles whose processes (*Ausläufer*) everywhere run into the tumor. In many places the muscle bundles appear to be compressed by the xanthoma masses, here and there changing, losing their striation and having a waxy appearance, though this is exceptional."¹ This explanation assumes an effect on the muscles which does not harmonize with the clinical and histological facts. In the first place it would take a far greater amount of pressure on the muscles to bring about such changes in them than a tumor, which has not sufficient density to raise up even the delicate epidermis of the lids, could possibly produce. In the second place it fails to take into consideration the facts which closer study of the muscle changes will disclose.

When we fix our attention on the muscle fibres in our sections we are struck first of all with the great disparity between the small amount of muscular tissue present in the sections and the large amount present in the normal eyelid. What has become of it? When we examine the muscular tissue more closely we find a number of changes in different fibres that indicate a degenerative process. Normal sarcolemma nuclei are comparatively few in number and are arranged at regular intervals at the periphery of the muscle substance on the inner side of the sarcolemma cylinder. In xanthelasma we frequently find muscle fibres in cross-section which show two or three or more round or oval nuclei lying in the substance of the fibre itself. Such fibres sometimes betray some inequalities in density and they may take a brownish-yellow tint with the Van Gieson stain and a deeper hue with methylene blue. Where we find fibres in longitudinal section we get the most marked evidences of degeneration. These changes must be seen to be appreciated, and I must refer to the figures which reproduce them very well. We see fibres that have lost their transverse striation, others that have a homogeneous, glassy appearance, the fibrillary structure having disappeared; others which show great variations in their calibre in the course of a single fibre; others in which there is a great proliferation of sarcolemma nuclei; others in which the muscle substance is

¹ *Histopathologie*, p. 959.

clumped in deeply staining masses; still others in which the clumps of muscle substance show a coarse vesicular or an irregular fragmentation; or again, fibres which have a granular or reticular appearance with one or more nuclei in their midst; and finally portions of muscle fibres which are indistinguishable from "xanthoma cells." Details of these changes are pointed out in the description that accompanies the plates.

One form of degeneration of the fibres deserves more particular mention. It is that in which the first change seems to be a thickening of the sarcolemma. Figures 9 to 13 show it in both longitudinal and cross section. Coincident with or following this thickening there are often profound changes in the muscle substance, together with a proliferation of the sarcolemma nuclei. Beginning around a group of nuclei the muscle has been replaced entirely or in part by a fine vesicular structure. These vesicles have in general round outlines and appear to be empty, though I do not doubt that they are in reality filled with a lipoid substance similar to that which fills the meshes of the "xanthoma cells" and that the necessary manipulations of the sections through the various reagents has dissolved it out. At a greater distance from the nuclear group the vesicles have a more delicate structure that resembles most nearly the reticulated structure of the "xanthoma cell." The thickening of the sarcolemma is something so unusual in muscle pathology that I have sought to explain the picture by assuming that the broad band of thickened sarcolemma is in reality a band of muscle substance altered, condensed and fused with the sarcolemma; but such pictures as figures 11, 12, and 13, which distinctly show muscle substance shrunken away from the thickened peripheral band seem to negative this view. This shrinking away of the muscle substance occurs only in fibres which have a thickened sarcolemma.

It must be noted that the thickening of the sarcolemma is not the rule in this process. The xanthelasmic degeneration commonly takes place without it. The usual form of degeneration seems to run the following course: The fibre loses its transverse striation; its primitive fibrillæ fuse together, obliterating the Cohnheim fields (Figs. 1 to 4, 6 and 7); the sarcolemma nuclei proliferate enormously and assume a position within the substance of the fibre; the muscle substance becomes clumped in irregular, deeply staining masses which subsequently break up; the entire fibre assumes a vesicular or finely reticular structure, in the meshes of which the fatty substance that stains brownish with osmic acid is found. In this stage

the fibre may be called a xanthelasma cylinder (Fig. 3). Such a cylinder on cross-section is a perfect "xanthoma cell" and many if not most of the "xanthoma cells" are in reality such cylinders cut across. But later a further change takes place by which the cylinders break up into fragments which give the picture of "xanthoma cells." The details of this process are not entirely clear, and it is possible that the change takes place in several ways. It must be observed that by no means every "xanthoma cell" has a cell wall; some are simply reticulated fatty masses without a limiting membrane. But most of them are enclosed in a distinct wall. This appearance is, of course, easily understood when we are dealing with cross-sections of xanthelasma cylinders. In some longitudinal sections of xanthelasma cylinders the sarcolemma has a wavy outline as if its contents had undergone some contraction, causing the sarcolemma walls to collapse and the two sides to approximate each other, giving the picture of a string of fusiform "xanthoma cells" held together by a thread of sarcolemma. By the final rupture of this sarcolemma thread the picture of independent fusiform or oval "xanthoma cells" lying in rows is produced. In some cases the appearance of a cell wall may be produced by the delicate fibres of connective tissue of the original muscle bundle. Whatever the details of this process, a study of such a picture as is shown in figure 14 can leave no doubt as to my main contention, that the "xanthoma cell" is derived from degenerated muscle fibres.

It must not be assumed that these different pictures are found in every section or even in every specimen. But some of these changes may be seen in every specimen and they are found most abundantly in xanthelasma of recent development; in cases of long standing the changes have probably all taken place, the process is finished and we rarely get anything more than its end product, the so-called "xanthoma cell."

A consideration of the final stages of xanthelasma in old age, the nature and destiny of the pigment, the relation of the xanthelasmic degeneration of muscle fibres to other muscle degenerations as in amyotrophic lateral sclerosis, pseudo-hypertrophic paralysis, etc., etc., is reserved for further study.

The myogenetic origin of xanthelasma enables us to understand: (1). The absence of any clinical signs of tumors. (2). The practically exclusive occurrence in the eyelids where peculiar muscular conditions exist. (3). Its occurrence in symmetrical discrete patches at the canthi of the lids. (4). Its common arrange-

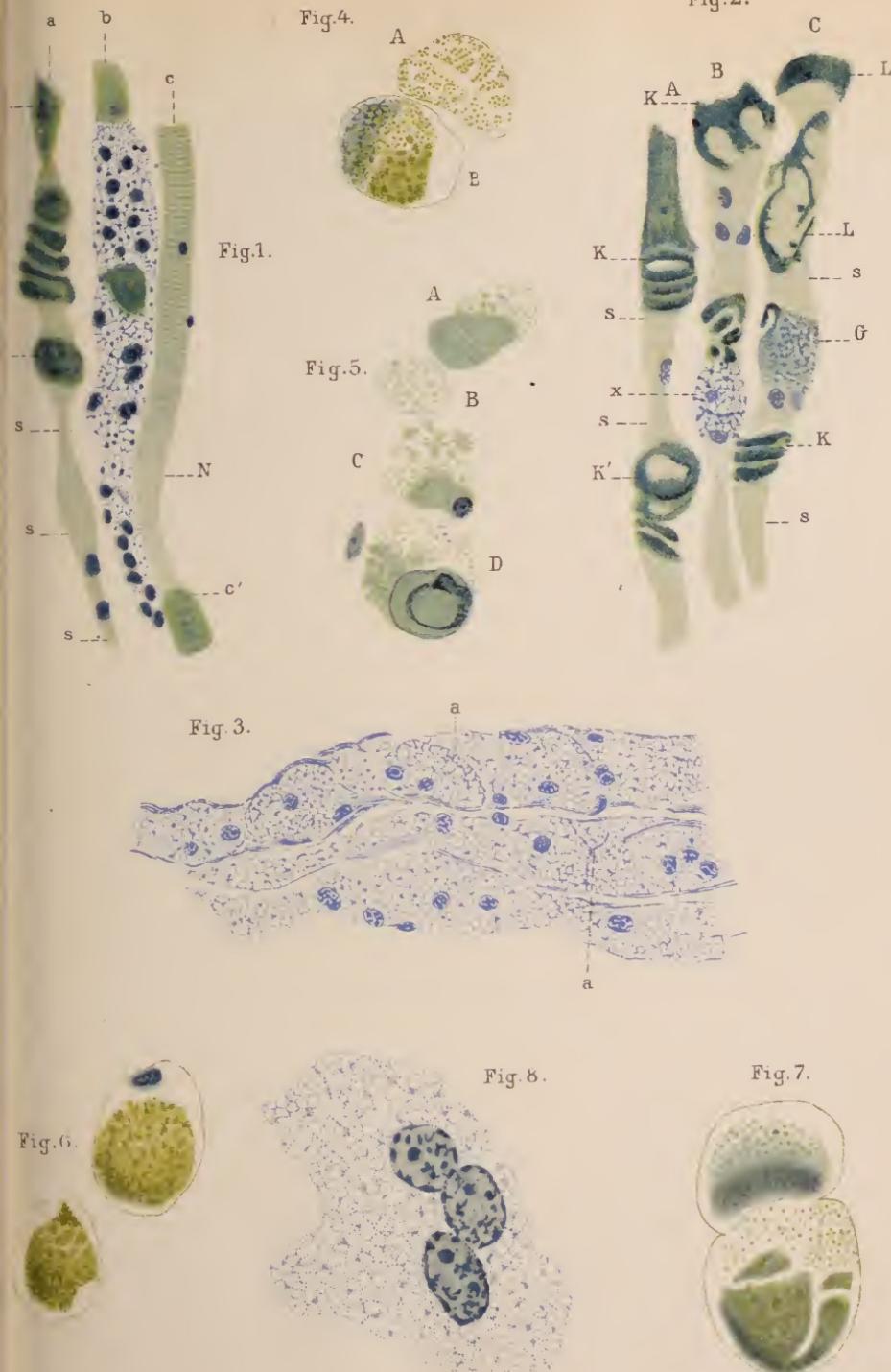


PLATE LXXI.—To Illustrate Article by DR. S. POLLITZER.

Fig. 9.



Fig. 10.

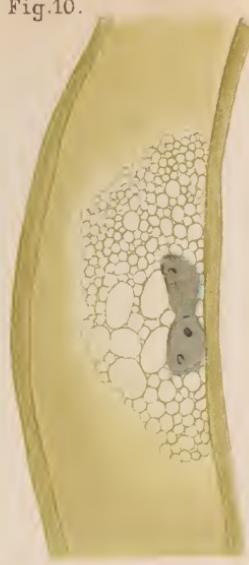
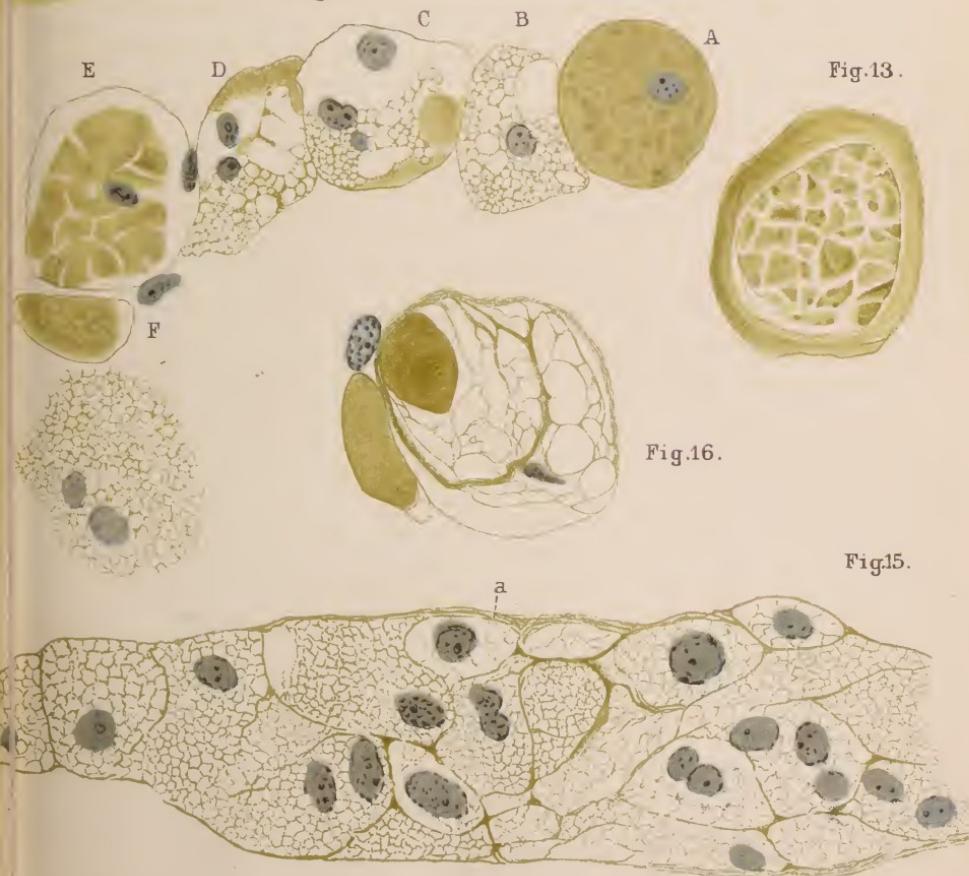


Fig. 11.



Fig. 14.



Ira Van Gieson, del.

Lith. Anst. Julius Klinkhardt, Leipzig.

PLATE IXXII.—To Illustrate Article by DR. S. POLLITZER.



FIG. 1.



FIG. 2.

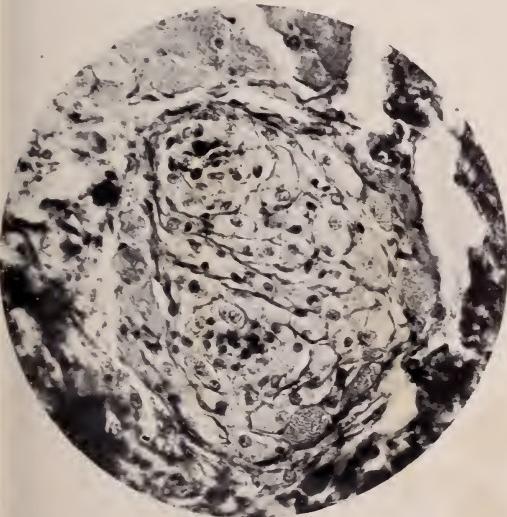


FIG. 3.

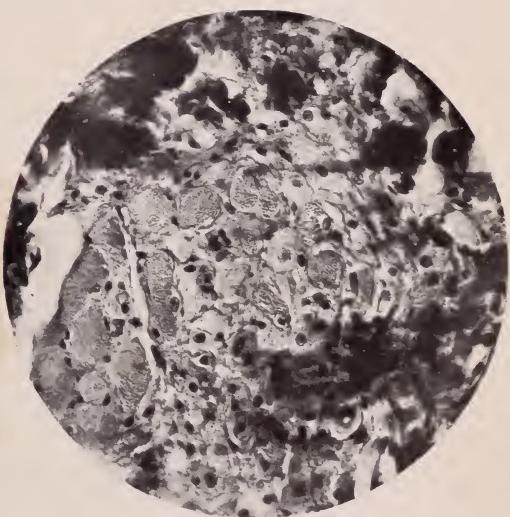


FIG. 4.

ment in elongated plaques whose long axes are parallel to the course of the orbicularis fibres. (5). Its usual development after middle age when degenerative processes are apt to occur. (6). The peculiar yellow pigment, an invariable accompaniment of muscles undergoing fatty degeneration. (7). The disappearance of the greater portion of the muscular tissue in the affected area normally present in the eyelids, and finally, (8) the microscopic structure of the tissue itself.

In conclusion, xanthelasma (the xanthoma planum palpebrarum of the authors) is in no way related to xanthoma tuberosum. It is the product of a peculiar fatty degeneration of muscle fibres of the eyelids. It belongs not to the neoplasms but to the degenerations like colloid degeneration of the skin.

EXPLANATION OF PLATES.

All the figures were made by Dr. Ira Van Gieson and were traced with a camera lucida. The material in every case was obtained from the living subject and transferred directly to the fixing agents.

PLATE LXX, FIGURE 1. Formalin; Polychrome. Leitz, oil immersion 1-12, Oc. 1.

Three muscle fibres. Fibre *c* is normal throughout its greater portion, showing vertical and transverse striation and Krause's lines, at *N* the striation becomes indistinct and disappears. The fibre here has a homogeneous appearance and is reduced in its calibre; at *c¹* it is again enlarged into a homogeneous darkly staining mass of degenerated hyaline-like muscle substance. The fibre *a* shows a further stage of this conversion into clumps and segments of darkly staining degenerated muscle substance, *K*, and is very irregular in calibre. Such fibres are often seen in waxy degeneration of muscles. At one end are two sarcolemma nuclei lying within the narrowed sheath.

In fibre *b* are two of the hyaline-like degenerated segments of muscle substance and the rest of the sarcolemma sheath is filled up with a fine net work, in the nodal points of which are slight thickenings. The sarcolemma nuclei have proliferated to a considerable degree.

FIGURE 2. Formalin; Polychrome. Leitz, oil immersion 1-12, Oc. 1.

Three degenerated muscle fibres. Fibre *A* shows appearances similar to *a* in figure 1. At *K¹* a globular mass of degenerated muscle substance appears to have a hollow centre. In fibre *C* a similar phase of degeneration is shown, but apparently more advanced, as the degenerated segments show a tendency to become hollow and vesicular, *L* and *L¹*, and at *G* to become finely granular. The fibre *B* shows a transition stage from this phase of degeneration to the production of structures indistinguishable from "xanthoma cells."

FIGURE 3. Alcohol, methylene blue. Reichert oil immersion, 1-12, Oc. 2. Three muscle fibres which have become converted into xanthelasma cords or cylinders not yet segmented into "xanthoma cells." At *a*, *a*, are beginning indications of this segmentation more fully developed in figure 15.

FIGURE 4. Idem. Cross-section of normal muscle fibre *A*, and of muscle fibre *B*, showing early stage of degeneration leading to the "xanthoma cell"; swell-

ing, fusion and obliteration of the primitive fibrillæ at the right; at the left in addition the appearance of hyaline-like material similar to K in figure 1.

FIGURE 5. Idem. Cross-section of four fibres. B, normal. A and C show swelling, clumping and fusion of primitive fibrillæ and obliteration of Cohnheim's fields by insular masses of swollen and fused primitive fibrillæ which have a glassy, hyaline-like appearance and stain deeply. In D the same changes have taken place, but in addition the hyaline-like change is more advanced so that bizarre opacities are seen which correspond to cross-section of such a field as L K¹ and B in figure 2.

FIGURES 6 and 7 show similar changes and also crescent-shaped opacities at one side of the fibre. The muscle substance has shrunken away from the sarcolemma.

FIGURE 8 shows the completed product of the xanthelasmic degeneration of a muscle fibre, the so-called "xanthoma cell." It contains three descendants of the original sarcolemma nuclei. In well-fixed osmic acid specimens, mounted in glycerine the meshes of the reticulum are seen to be filled with a brown staining lipoid substance.

PLATE LXXI, FIGURES 9 and 10. Fleming, Polychrome, Reichert oil immersion, 1-12, Oc. 4.

Longitudinal sections of two muscle fibres which show early stages of the transformation of the muscle substance into vesicular globules preceding the formation of the "xanthoma cell." These changes occur in a limited area in the fibre, thence extending and involving the entire fibre. In figure 9 the muscle substance has lost its striation and is hyaline in appearance. The sarcolemma is greatly thickened. The sarcolemma nuclei have proliferated in a group which lies in the midst of a congeries of larger and smaller transparent vesicles enclosed in a delicate membrane. These vesicles become smaller at a greater distance from the nuclear group, as seen in figure 10, and their envelopes ultimately become the reticula of the "xanthoma cells." (Figs. 8 and 14).

FIGURE 11. Idem. Cross-section of a fibre with greatly thickened sarcolemma, showing the vesicular transformation seen in figures 9 and 10 and a portion of hyaline-like muscle substance at its lower segment.

FIGURES 12 and 13. Idem. Cross-section of muscle fibres with greatly thickened sarcolemma,—compare with figures 4 to 7,—showing homogeneous hyaline-like transformation. In figure 13 the fascicular outlines of Cohnheim's fields are still preserved, but the bundles of swollen fibrillæ have not yet fused as in figure 12.

FIGURE 14. Idem., Ocular 2. The figure shows in one field practically the sequence of changes from a muscle fibre to a xanthelasma cylinder. In fibres E and F the degeneration has progressed only to the hyaline stage; in A and E the nuclei have an abnormal position and are embedded in the muscle substance. In C and D there are still portions of the hyaline muscle substance in segments at the periphery of the fibres while the greater part of the fibre has become converted into the apparently clear larger and smaller vesicles seen in figures 9 to 11. In B all the muscle substance has been transformed into this vesicular structure making a xanthelasma cylinder. In G the transformation is complete, the vesicles having become minute and uniform.

FIGURE 15. Idem. Oc. 4., a xanthelasma cylinder segmented into "xanthoma cells." Septa which seem to come from the sarcolemma sheath form the limiting membrane of the "xanthoma cells."

FIGURE 16. Idem. Cross-section of a muscle fibre. A portion of hyaline-like muscle substance is still preserved. The remainder of the Cohnheim field is

traversed by coarse and fine trabeculae which seem to be formed in part by the coalescence of the walls of the larger and smaller vesicles and in part by septa passing off from the thickened sarcolemma.

PLATE LXXII. Photomicrographs.

FIGURE 1. Cross-section of a normal upper eyelid, inner canthus, showing the large amount of muscle in the field and its distribution. Bundles of fibres are seen almost directly under the epidermis.

FIGURE 2. Xanthelasma. Cross-section of a small muscle bundle, in which two fibres are replaced by "xanthoma cells."

FIGURE 3. Xanthelasma. Cross-section of a muscle bundle whose peripheral fibres are normal, while those in the middle are replaced by "xanthoma cells."

FIGURE 4. Xanthelasma. Cross-cut muscle fibres and "xanthoma cells" are irregularly intermingled.

51 EAST SIXTIETH STREET.

CANCER IN TAR WORKERS.*

BY JAY FRANK SCHAMBERG, M. D., Philadelphia.

CANCER of the skin exhibiting special characteristics has been encountered in chimney sweeps and in tar and paraffin workers. The patient whose history is detailed below sought treatment because of the distress caused by the cutaneous disease from which he was suffering.

CASE I. R. R., forty-five years of age; born in Ireland. He has been engaged for twenty years in saturating paper with tar at a temperature of 240° F. The patient's work was drawing the wet tar paper through rollers; in the course of this labor the hands and arms would become thoroughly smeared over with coal tar.

The patient had typhoid fever fifteen years ago, but has not been sick since.

The present trouble was first noted two years ago, since which time it has been growing progressively worse. The arms from the elbows to the wrists, particularly the palmar aspects, and the backs of the hands, present numerous red, slightly keratosic patches varying in size and shape. Some are of the size of pinheads, while the largest are fingernail sized. In addition to these reddish patches, a large number of elevated growths is present. They vary from 2 to 20 mm. in diameter. The most elevated project about 4 mm. above the level of the skin. They are somewhat wart-like in appearance with a slightly adherent horny central crust. When the crust is removed, bleeding occurs and a superficial ulceration is disclosed. Scars are also present where some of the lesions have broken down and have undergone spontaneous cure. A large elevated and ulcerated growth at the base of the right thumb disappeared after the removal of the crust and the application of a 10 per cent. pyrogallol-alcohol.

On the right arm, 21 growths can be counted and on the left 18. No lesions are present on the palms of the hands or above the elbows. The only other portion of the body affected is the scrotum. Here there is a large ulcerated and crusted lesion with rolled, indurated borders, 25 mm. in length and 10mm. in width. This growth is slowly increasing in size. Within the past month, two new lesions about 6 mm. in diameter, with depressed centres, have appeared upon adjacent portions of the scrotum.

The hair follicles on the skin of the proximal phalanges and above

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the web of the thumb are blocked with black comedo-like plugs; these represent tar-stained follicular keratoses, just palpable to the finger passed over the skin.

March 20, 1910. The patient has returned for treatment after an absence of several months. About thirty growths can now be counted upon the right arm and hand. A large, elevated, ulcerated growth, 38 by 30 mm. has appeared over the ulnar epiphysis where a smaller tumor had been excised. The large growth at the base of the thumb has not recurred. The ulcerated lesion on the scrotum has increased in size and now measures 30 by 20 mm.

In order to determine whether any other workmen performing the same labors as Case I, were similarly affected, I visited the tar works where the patient is employed. This is one of the largest industrial institutions of the kind in the country.

I examined about twenty men whose work caused them to become besmeared with tar. In the manufacture of tar paper the men's arms are soiled with tar and their clothing is more or less saturated. Most of the men stated that they suffered from time to time from outbreaks of "yellow heads" on their arms, but that these soon passed away. In a number of workmen, I saw mild acneiform eruptions upon the arms, representing a folliculitis. I do not know whether it is the tar which causes this eruption or the "heavy oil" with which the men wash in order to remove the tar from the skin.

In addition to Case I, whose history has been detailed, four other workmen were found showing evidences of beginning or well-developed tar cancer. Their histories are briefly as follows:

CASE 2. M. S., forty-two years of age, has been working in tar for thirteen years. The entire dorsal surfaces of the wrists, hands and fingers are the seat of tar blackheads, *i. e.*, of follicular keratoses. Practically every hair follicle is plugged with a horny mass stained black with tar. The proximal and middle phalanges are involved as well as the dorsum of the hand. The horny plugs cannot be removed by vigorous friction with soap and water, but can be picked out leaving follicular depressions. These follicular keratoses first began to appear two years ago.

On the right hand are three pea-sized, elevated epithelial growths which bear all the ear-marks of beginning epithelioma. Time did not permit a microscopic examination in time for this report.

CASE 3. J. P., fifty-five years of age, has been working in tar for thirty years. The duration of the condition on the hands is less than a year. The dorsal surfaces of the hands are completely covered with flat keratoses of the senile type. On the ulnar side of the wrist is an oval ulceration 15 mm. in length with elevated and infiltrated base. From the centre of this, two horn-like processes, about 7 mm. in length, project. A depressed, roundish scar, 10 mm. in diameter, shows where a portion of the present growth existed and has spon-

taneously disappeared. Small indurated and slightly elevated keratoses are present on the backs of the hands, and several pea-sized epithelial nodules are visible in the same region.

This patient believes that the washing with "heavy oil" has been responsible for the condition of his hands, as the oil makes the skin harsh and dry.

CASE 4. H. C. R., sixty-five years of age, working in tar since the age of ten years. The patient presents a half dozen circumscribed, pin-head-sized keratoses on the backs of the hands. In the centre is a pea-sized, brownish, keratosic patch slightly ulcerated and slightly depressed below the level of the skin. There are also about a half dozen firm, pea-sized, pinkish-white epithelial elevations suggesting indolent, superficial epitheliomata.

CASE 5. R. D., forty-eight years of age, has been working in tar thirty-two years. For some years he has been a steam-fitter at the tar works, but his hands and arms have become daily smeared with tar. During the first year in the tar works, the patient had numerous boils on the body, arms and thighs. This was due, according to his belief, to contact with anthracene oil. Since the patient has worked in coal tar and "heavy oil," he no longer has boils.

Four years ago the patient noticed, on the ulnar side of the left hand, a warty growth from which, later, horny "sprigs" projected. The patient pulled the horny growth off, leaving an ulceration which has since healed up with the formation of a depressed scar, 11 by 6 mm. in diameter and looking not unlike a deep vaccinal cicatrix. The dorsal surfaces of the hands and phalanges are covered with comedo-like plugs occupying the hair follicles. Here and there are small warty excrescences about 2 mm. in diameter and with a central cornaceous projection. The patient says he pulls these out when they develop and they then heal up.

Most of the men examined who were free of any cutaneous trouble were between the ages of twenty and thirty-five, although a few were older. It would seem that the carcinomatous changes are prone to occur as the patients near the fifth decade of life.

MICROSCOPIC EXAMINATION.

A very small epithelial growth, 3 mm. in diameter, and exhibiting in its centre a horny elevation, was removed for microscopic study. The sections were stained with haematoxylin and eosin. Under low power, the sections show an increase in the thickness of the stratum corneum. Over the middle of the section there is an enormous hyperkeratosis projecting with abrupt edges above the level of the skin. The stratum granulosum is well pronounced except below the central keratosis where it is entirely absent. The horny layer here dips down into a crateriform depression in the rete Malpighii into which the horny cells insensibly merge. The latter take the eosin stain more intensely than elsewhere, and furthermore, show a persistence of nuclei. A number of layers of subjacent rete cells take the eosin stain instead of a faint haematoxylin stain.

The Malpighian layer exhibits a marked hyperplasia throughout the entire growth. In the central portion, the overgrowth is particularly marked, the rete projections being greatly enlarged both in their vertical and transverse diameters.

The epithelial cells of the Malpighian layer in many parts of the section exhibit perinuclear vacuolation. In portions of the excised tissue where the interpapillary rete pegs are normal, the basal cells show an orderly columnar arrangement and a sharp line of limitation between the rete and the corium. In the more hyperplastic areas, the basal epithelial cells have lost their columnar regularity and the axes of the nuclei slope in all directions: the line of demarcation is in such places difficult to distinguish.

A long pyriform rete process connected at the nether end with a sweat duct and traceable directly to the sweat coils is seen in a number of sections. A study of serial sections demonstrates that this projection becomes snared off from the epidermis leaving it isolated in the corium. Other epithelial cell nests in the papillary layer have been isolated from the basal epithelial layer.

In some sections, the epithelial cells have broken through the basement layer on the lateral aspect of a rete projection, and have from this point of extrusion into the surrounding stroma, proliferated downward, paralleling the intact basement layer lower down. There is much disorganization of the surrounding rete cells at such sites of egress. The appearances here are different from the orderly downward proliferation of rete pegs.

CORIUM.

In the papillary layer of the corium, the blood vessels are seen to be greatly distended and mantled by cells. Here and there are closely aggregated circumscribed masses of round cells, in the centres of which one or several vessels may be seen in cross section. The round cell infiltration is intense in these foci. Some cell infiltration is also seen in the neighborhood of the sweat coils.

In one area, epithelial proliferation and downgrowth are seen to start from the lateral wall of a rete projection as a club-shaped bud.

Tracing this through several sections this bud is observed to become snared off, producing an epithelial nest. Here and there horny pearls are seen in the papillary layer of the corium.

CELL CHANGES.

Here and there in the rete Malpighii, particularly in the area subjacent to the marked hyperkeratosis, are seen large, rounded, nucleated epithelial cells having a strong affinity for the eosin stain, although they occur singly and are much scattered.

At various levels in the rete, but more especially in the neighborhood of the point of origin of epithelial off-shoots, are seen groups of loosely connected epithelial cells surrounded by a narrow clear space, and containing one or several eosinophilic cells. These cell groups appear to lie in the epidermis, one being observed directly below the granular layer. A careful study of them, however, suggests the possibility of their representing transverse or oblique sections of the apices of papillæ lying unusually high in the epidermis. Leo Loeb suggests that these eosinophilic cells may be due to the phagocytosis of erythrocytes by epithelial cells.

Many nuclei of the deeper rete mucosum exhibit mitotic figures.

CANCER IN CHIMNEY SWEEPS.

Chimney sweep's cancer was first described by Percival Pott in 1775, (*Chirurgical Works*, London, 1775, p. 734). He wrote: "There is a disease peculiar to a certain set of people, which has not to my knowledge, been publicly noticed. I mean the chimney sweep's cancer. It is a disease which always makes its first attack on and its appearance in the inferior part of the scrotum; where it produces a superficial, painful, ragged, ill-looking sore, with hard and rising edges. The trade call it soot wart."

Since the days of Pott, a score or more of writers have recorded cases of chimney sweep's cancer. The reported cases are chiefly from England, the disease being almost unknown in Scotland, Germany, America and France. I believe but one case has been reported from Germany. Curling says pit coal from which soot is produced is very sparingly employed as fuel elsewhere than England.*

In nearly all of the reported cases, the scrotum was involved,

*Other writers on chimney sweep's cancer are: Bell (1795), Anciaux (1816), Mérat (1820), Aldis (1820), Stöhr (1820), Earle (1825), Cooper (1830), Hasper (1837), Müller (1838), Budd (1842), Zoude (1841), Curling (1845), Coley (1850), Wormald (1850), Paget (1850, 1863), Dixon (1850), Nelaton (1855), Milton (1860), Thiersch (1865), Hamilton (1875), Mohns (1876), Lawson (1878).

although in some the arms, hands and thighs were likewise attacked. The predilection for the scrotum has always been explained on the ground that the rugose skin permitted the soot to collect in the furrows and there exert an irritant effect: it was also urged that the thinness and vascularity of the skin of the scrotum were factors. It will be seen later that the scrotum is likewise an extremely common seat for tar and paraffin cancer.

Despite this fact, cancers of the scrotum form but a minute percentage of cancers generally. In the Cancer Hospital in London from 1851 to 1871, among 2076 cancers in males, only 9 attacked the scrotum. These figures likewise indicate the relative rarity of chimney sweep cancer. During a period of 5 to 7 years in Guy's and St. Thomas's Hospital in London, only 2 or 3 cases of chimney sweep's cancer were observed. Lawson, writing in 1878, said that chimney sweep's cancer had undoubtedly diminished in England in recent years and that this diminution had been attributed to the Chimney Sweeps Act which prohibited children from cleaning chimneys, and to economic conditions which made it unprofitable to sift the soot for sale. Much friction of the soot laden clothes against the scrotum occurred during the process of sifting. Curling remarks that the use of machinery to clean chimneys has reduced the incidence of scrotal cancer.

That contact with soot may produce cancer in other regions is demonstrated by an interesting case reported by Earle (*Med. Chir. Tr.*, xii, p. 305). A gardener had been in the habit of strewing his plants with soot in order to keep away "slugs." The soot was carried in a garden pot, the handle of which was supported on the left wrist. A large cancerous ulcer developed on the flexor surface of the left wrist and the back of the hand.

Lawrence (*Med. Times*, London, 1850, p. 63), reported the case of a chimney sweep who used to carry a soot bag over the left shoulder, supporting it against the side of the face; this man developed a warty cancer of the left ear.

REPORTED CASES OF CANCER IN CHIMNEY SWEEPS.

Reporter	Sex	Age	Occupation	Location of growth	Outcome	Remarks
Pott						
Bell						
Benjamin						
Anciaux						
Merat						
Aldis						
Earle	Male	49	Gardner	Wrist and back of hand		
Hasper	Male	30	Chimney sweep	Scrotum and testicle	Death	Used soot on plants
Budd						
Zoude	Male	45	Chimney sweep	Scrotum	Excision	Apparently cured
Coley						
Wormald	Male	59	Chimney sweep	Scrotum	Recovery	Operated on previously by Cooper
Dixon	Male		Chimney sweep	Scrotum and testicle	Operation: Recovery	
Nelaton						
Milton	Male	29	Chimney sweep	Scrotum	Recovery	
Stanley	Male	30	Chimney sweep	Scrotum	Excision Recovery	
Hamilton	{ Male		Chimney sweep	Scrotum	Ablation	
			Chimney sweep	Scrotum	Ablation	
Lawson	Male		Chimney sweep	Arm and axillary gland	Amputation at shoulder	
Cooper	Male	Very Old	Chimney sweep	Face		
Curling	{ Male		Chimney sweep	Scrotum and lymphatic glands	Death	
		51	Chimney sweep	Scrotum and lymphatic glands		
Paget	{ Male	55	Chimney sweep	Penis		No visible lesions on scrotum
		48	Chimney sweep	Inguinal glands		
Lawrence	Male		Chimney sweep	Scrotum and left ear		Carried bags of soot on left shoulder and against face
Headington	Male	64	Chimney sweep	Scrotum		
(cited by Curling)						
Earle	Grandfather, father and two sons all had scrotal cancer					
		22	Chimney sweep	Scrotum		
Earle	{ Male	30	Chimney sweep	Scrotum		
		35	Chimney sweep	Scrotum and testicle	Death	
Heath	Male	18	Chimney sweep	Scrotum	Operation: Death	

TAR AND PARAFFIN CANCER.

Volkmann reported in 1873, (Third Surgical Congress Berlin, 1874), three cases of primary scrotal cancer occurring in workers in paraffin and tar. He had had during a period of seven years, the opportunity of observing the effects of tar and paraffin upon the skin in the numerous neighboring tar works. (It is not the finished paraffin which produces the cutaneous effects described, but a fluid blackish mass from which, during cooling, the paraffin is derived; this is called paraffin mass).

Volkmann distinguishes an acute and a chronic stage of dermatitis resulting from paraffin irritation. The acute stage expresses itself in various eruptions that are at times acneiform and at other times exhibit broader papules. In other cases there are severely inflamed, partly confluent nodules and boils. But few workers in the fluid products in the manufacture of paraffin escape this condition. The acute stage lasts several months, and then the skin becomes accustomed to the contact of the aforesaid material so that the severely inflamed, moist and itching skin changes no longer develop. Instead there now develops an increased formation of epidermis with an exaggerated secretion of the oil glands. The papules, boils, and nodules shrink and form flatter, psoriasis-like spots with here and there rust-colored pigment-spots. They may likewise leave behind whitish scars. The skin becomes dry, parchment-like or scaly and fissured. The hyperplastic epidermis cells lead either to the formation of circumscribed or more diffuse horny thickening. Mixed with a lesser or greater amount of sebaceous secretion, they form seborrhoeic plaques and crusts. Volkmann compares their appearance with hardened wax drops. When abundant they may present a resemblance to ichthyosis. This skin affection has been called "tar itch" by workers in this material. With the further development of the disease, there develop multiple warty growths which later singly or in numbers degenerate into carcinomata. This last stage is described by Volkmann as follows: As a result of individual predisposition and particularly, deficient cleanliness, the process which previously has been a hyperplastic epidermis growth and sebaceous secretion, now develops into multiple warty or papillary formations, some of which degenerate into cancer. In some cases, the sebaceous crusts above described exhibit almost a

horn-like consistency. The chief seat of these hyperplasias are the exposed forearms and the scrotum. In an old workman, Volkmann counted fifteen such warty growths with thick crusts on the dark-brown spotted and fissured forearm, and three on the scrotum. This picture of warty growths completely suggests the "verruca can-crosa" of the aged.

In 1876, Joseph Bell placed on record two cases of paraffin epithelioma involving the scrotum.

In 1880, Tillmanns reported a case of cancer in a paraffin worker. A man forty-nine years of age, had worked twenty-one years in paraffin factories. He developed, gradually, a dermatitis on the arms, hands, thighs and scrotum, then warty growths and finally a large scrotal ulcer with infiltrated border. This was diagnosed as a cancer, and was excised. There was no metastasis in the neighboring glands. The microscopic examination by Thiersch showed the typical picture of cancer of the skin. One year later multiple cancerous lesions developed on the flexor surface of the left forearm and an enlarged gland in the axilla. Tillmanns excised the growths and the enlarged axillary glands. The result was not satisfactory, and later further lymphatic metastasis occurred. Volkmann cleaned out the axillary space of this patient and amputated the forearm at the middle.

Schuchardt, in 1885, published reports of four cases of paraffin cancer.

Eckhardt, in 1886 (Inaugural Dissertation, Halle, 1886), reported four cases of cancer in paraffin workers.

CASE 1. A man fifty years of age, worked in paraffin works sixteen years. He had an early acneiform eruption: later, papillary growths developed on the thighs and a cancer appeared on the scrotum. The scrotum and testicles were removed. The diagnosis was confirmed by microscopic examination.

CASE 2. A man fifty-nine years of age, worked in paraffin factories eleven years. The hands and arms exhibited warty growths. On the left side of the scrotum there was a two-mark-sized ulcerated tumor. Excised: Recurrence: Glandular enlargement: Death.

CASE 3. A man fifty-five years of age; eleven years in paraffin works. On the scrotum there was a five-mark-sized ulceration of typical carcinomatous appearance. Operation: Subsequent glandular involvement: Death.

CASE 4. A man, aged fifty-eight; fourteen years in paraffin works. On the flexor surface of the right elbow there was a carcinomatous ulcer the size of the palm of the hand. The humerus was amputated at its upper third. Recurrence in axillary glands: Death.

Liebe, in 1892, published an article on tar and paraffin cancer and reported a case of his own. He gives the same stages of the disease as does Volkmann, namely dry dermatitis, pigmentation and warty formations that develop into multiple cancers. The microscopic examination also confirmed Volkmann's description.

Kirk (*Brit. Med. Jour.*, 1903), reported two cases of paraffin cancer in 1903, and described the conditions under which this affection develops in Scotland.

CASE 1. Male, thirty years of age, paraffin worker. The patient would not wear the customary leather apron, and his trousers were constantly soaked with the paraffin fluid. He developed an eczema of the scrotum and boils on the thighs. These were neglected and when he presented himself for medical treatment, he was in an utterly hopeless condition, with the right side of the scrotum, the root of the penis, the abdominal wall and the inguinal region all involved in an epitheliomatous mass. The man died two months later.

CASE 2. A man, seventy-one years old, had worked in paraffin thirty-four years. He suffered from eczema and boils. Twelve years ago one of the boils on the right forearm broke down, ulcerated and became epitheliomatous. This and two subsequently recurring growths were excised.

Zweig, in 1909, reported three cases of cancer occurring in workers in coal dust briquette factories.

CASE 1. A man aged thirty-five, had an inflammation of the skin and later gradual wart-like growths on the face. These were destroyed by the galvanocautery. Later a growth in the right nostril and on the septum were successfully destroyed.

CASE 2. A briquette-worker had small and large carcinomatous nodules on the scrotum which were excised.

CASE 3. A briquette-worker, twenty-nine years of age, was exposed to the vapor and dust of pitch. During a period of several years there developed a number of multiple warty growths which were extirpated. These were present on the face, fingers and scrotum. Later, those on the face developed into ulcerating cancers and were destroyed. After a period of abeyance and absence, the patient returned with a secondary growth which appeared to have had its origin in the antrum. Despite treatment, this extended and the greater part of the right half of the face was destroyed, the patient ultimately dying of exhaustion. The diagnosis was confirmed by microscopic examination.

REPORTED CASES IN TAR AND PARAFFIN WORKERS

Reportér	Sex	Age	Occupation	Location of Growth	Outcome	Remarks
Volkmann	Male	56	Paraffin worker	Scrotum	Scrotum and testicles surgically removed; recovery.	
	Male	49	Worker in fluid tar	Scrotum	Removal of half of scrot'm; rec'v'ry	
	Male	60	Paraffin worker	Scrotum and arm		
Bell, Joseph	Male	47	Paraffin worker	Scrotum	Excised	
	Male	34	Paraffin worker	Scrotum	Excised	
Cameron	Male	46	Paraffin worker	Scrot'm, hands and thighs		
Tillmanns	Male	49	Paraffin worker	Scrotum, fore-arms and axillary glands	Death	Several operations on axillary glands
Eckhardt	Male	59	Paraffin worker	Scrotum, hands and arms	Death	
	Male	50	Paraffin worker	Scrotum and thighs		
	Male	55	Paraffin worker	Scrotum and i'g'u'l gl'nds	Death	
	Male	58	Paraffin worker	Arm	Death	
Schuchardt	Male	44	Paraffin worker	Left forearm		
	Male	50	Paraffin worker	Scrotum, anus and legs	Removal of scrotum and testes	
	Male	59	Paraffin worker	Scrotum	Removal of scrotum and ingui-nal glands	
	Male	55	Paraffin worker	Scrotum		
	Male	58	Paraffin worker	Face, back, arms and hands	Death	Ampu'tion of arms and removal of axillary glands. Recurrence
Liebe	Male	53	Paraffin worker	Arms and Scrotum		
Kirk	Male	30	Paraffin worker	Scrot'm, thighs etc.	Death	
	Male	71	Paraffin worker	Arms		
Zweig	Male	35	Coal briquette worker	Face	Recovery	
	Male	Coal briquette worker	Scrotum	Recovery		
	Male	29	Coal briquette worker	Scrotum, face and fingers	Death	

SUMMARY. Out of 24 cases of cancer in chimney sweepers, there was cancer of the scrotum in 19. Out of 22 cases of tar and paraffin cancer above reported, the scrotum was involved in 17. Four of the cases of chimney sweep's cancer and seven of the tar and paraffin cancers are known to have ended fatally: concerning many of the cases, the outcome is not known.

DEGREE OF MALIGNANCY.

A noteworthy feature of the tar cancers that I have observed is their frequent tendency to undergo spontaneous involution. Many of the lesions ulcerate and destroy themselves. Some of the patients have caused the disappearance of warty and epithelial growths by

gouging them out. The ability of the patients to cure many of the lesions themselves, is perhaps responsible for their indifference to the skin trouble. Only one of the five patients sought treatment for the condition, although another had a painful growth on the wrist. Other lesions in this patient had disappeared under simple home treatment or none at all. It would appear that the proliferative energy transmitted from one to another generation of epithelial cells is limited.

The older writers remarked upon the benignancy of chimney sweep's cancer of the scrotum. Nevertheless a number of deaths from this cause have been recorded. Lymphatic metastasis takes place with relative rarity. Commonly the enlargement of the neighboring lymphatic glands is inflammatory in character, the intumescence subsiding when the cutaneous growth is removed.

Tar and paraffin cancer are more likely to prove serious than soot cancer. Tar and allied products tend to produce a cancerosis of the skin, and proliferative and degenerative changes may insidiously take place without striking clinical evidence. Indeed, one or two instances of primary cancer of the inguinal glands in chimney sweeps without discoverable cutaneous lesions have been reported, one by Sir James Paget.

TAR AND ITS CONSTITUENTS.

Coal is produced in nature from vegetable matter, chiefly wood fibre, by the "partial elimination of oxygen and hydrogen and an increase of carbon: the process is a slow oxidation.

When coal is heated to redness in a closed receptacle, hydrogen, oxygen and nitrogen are driven off; at the same time a certain amount of carbon is volatilized in the form of hydrocarbons.

The chief sources of coal tar used in this country are illuminating gas works and coke works, the tar being a by-product.

Coal tar is distilled in iron stills, the resultant products being "light oil," "heavy oil," and the residue, pitch. "Heavy oil" contains about forty per cent. naphthalene.

The distillable part of the tar proper consists chiefly of benzene ($C_6 H_6$) and benzene derivatives, *i. e.*, benzols; phenol ($C_6 H_5 O$), and homologues; amido-bodies, aniline ($C_6 H_5 N-H_2$) and homologues; and condensed benzols such as naphthalene, anthracene, chrysene, etc.

If the anthracene oil is not all driven off, the resultant pitch is

soft instead of hard. In the crude anthracene oil are contained phenanthrene, paraffin, naphthalene, etc.

Anthracene is used commercially in the manufacture of coal tar dyes.

COMPARATIVE EFFECTS OF TAR PRODUCTS ON THE SKIN.

Volkmann says that the transformation of warts into epithelioma occurred more rapidly in the German tar workers than among the English chimney sweeps because the dry soot does not irritate as strongly as the fluid paraffin oil.

Only the impure or crude tar appears to contain the irritant which causes the development of carcinomata. Grandhomme (*Die Theer Fabriken*, Heidelberg, 1883), says that in the large works at Höchst a. m., where coal tar dyes are made, the cutaneous disorders due to tar are unknown.

Hoffmann says: "The first oil pressed out of paraffin, known as 'dark oil,' and used as gas oil or lubricating oil, is the most dangerous in this connection."

ANALOGY BETWEEN EFFECTS OF TOBACCO AND TAR.

Tillmanns, in discussing Volkmann's paper in 1873, recalled the existence in tobacco smoke and tobacco juice of a substance capable of producing cancer of the lips and tongue. Tobacco cancer is to an extent related to tar and soot cancer, inasmuch as in tobacco juice and smoke there is an irritating substance analogous to that present in tar and chimney soot.

Von Esmarch remarked before the Third German Surgical Congress that the cases he had observed of severe papillary cancer of the mucous membrane of the mouth and of the gums in youthful subjects, had occurred in those who chewed tobacco.

Von Langenbeck confirmed Esmarch's statements, and mentioned cases of cancer of the buccal mucous membrane due to holding masses of chewing tobacco against the cheek.

Ludwig (Ueber Einige Bestandtheile des Tabaks: *Arch. f. klin. Chir.*, xxx), examined the combustion products of tobacco, and found by passing the smoke through a U-shaped tube containing cotton, that a foul smelling tar was developed. In the water through which the smoke was passed, a large quantity of ammonium carbonate was found. Through further treatment of the tar, pure acetic acid and small quantities of carbolic acid were demonstrated.

Thiersch finds a considerable analogy between the influence of tobacco smoking on the under lip and that of tar and soot on the scrotal skin, in that in both instances the pathological result is connected with products of incomplete combustion.

In connection with this subject, it is interesting to quote the relative frequency of cancer of the tongue in males and females. Andrew, of Glasgow, noted 98 cases of epithelioma among 469 cases of epithelioma affecting various tissues. Of these 98 cases of tongue cancer, 88 occurred in males.

That something resident in coal tar, crude paraffin and soot is capable, after the lapse of years, of stimulating the growth of epithelial cells and of leading to cancer in certain subjects seems indisputable. Ludwig and others have suspected carbolic acid, which he likewise found in tobacco residue, but there does not seem to be much support for such an assumption.

Inasmuch as radium has been proven to be capable of stimulating epithelial proliferation, and cancer can be produced by the X-rays, the thought occurred to me to determine whether coal tar emitted any rays. To test this, I placed a copper cent, a flat key and a small brass numeral (3) upon a photographic plate in a pasteboard negative box lined with black paper. Upon the under surface of the lid, I attached a piece of cardboard smeared with coal tar, so that the tar faced downward. This box was enclosed in a black japanned tin cash box and the latter was shut in a dark closet for twenty-four hours. When the plate was developed a distinct shadowgraph of the three objects was seen upon the negative. This work was done so recently that there has not been time to carry out further investigations. I showed the negative to Dr. Arthur Goodspeed, Professor of Physics, in the University of Pennsylvania. He thought that the shadowgraph images suggested radioactivity in the coal tar. A specimen of the tar was left with him for further study.

If coal tar is proven to be radioactive, it would seem that this radioactivity may be responsible for the cancer in tar workers. Volkmann and other writers long ago noted that uncleanliness, *i. e.*, negligence in removing tar or paraffin from the skin was a factor in the production of the cancer. Tar may be lodged in the orifices of the skin, or in the furrows of the scrotum, and exert for years an influence upon the adjacent epithelial cells.

Furthermore, only certain kinds of coal seemed to be provocative of the cutaneous changes. In Germany, the so-called brown or

cannel coal, from which paraffin was made, was responsible. Chimney sweep cancer appeared to result almost exclusively from the burning of "pit coal" used for fuel in England. It is possible that certain coal may contain radioactive substances, and that in other coal such substances may be absent.

SUPPLEMENTARY NOTE.

(Added subsequent to the reading of the paper).

The tar left with Prof. Goodspeed, of the Department of Physics of the University of Pennsylvania, was carefully examined by Mr. D. H. Kabakjian, who has devoted special study to radioactive substances. He confirmed the previously observed property of the tar to influence a photographic plate. Various objects were placed upon an uncovered photographic plate in a dark box, and exposed to the direct action of coal tar spread on a glass plate and placed about one-fourth of an inch above the sensitized plate. After an exposure of twenty-four hours, a very distinct shadow picture of the objects was obtained.

The tar was then carefully tested by a most sensitive electrometer for any ionization that it might produce, but no such effect was discoverable.

A photographic test was then made of the presence of beta and gamma radiations. A sensitized plate was placed in a double X-ray envelope and objects were placed on this and exposed to the tar. No shadows were noticeable on developing the plate.

It was suspected that the photographic impression might be due to some gaseous emanation or substance given off from the tar. To test this, plates were exposed to tar in several beakers in dark boxes at different temperatures. One plate was exposed for five hours at 0° C. A second was exposed for five hours at room temperature (25° C), while a third was placed on top of a beaker of hot water so that the temperature was considerably higher than that of the room. There is almost no shadow on the plate exposed at zero temperature. At 25° C a distinct shadow is seen which, however, is much less dense than the one exposed at the highest temperature.

Mr. Kabakjian states that the photographic impression could not be due to radioactivity as that would be independent of temperature, and that it is reasonable to conclude that it is, in all probability, due to a gaseous substance given off from the tar.

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DISCUSSION.

DR. GROVER W. WENDE said that Dr. Schamberg's paper had interested him very much. In 1908 he presented before this Association a paper upon keratosis follicularis resulting in multiple epitheliomata, although there was no evidence of external irritation since the patient was occupied as clerk in a custom house for twenty years. During the discussion several members suggested that the patient might have taken arsenic. Dr. Wende said he at first entertained that idea, but upon further investigation found it impossible to consider that as an ætiological factor.

Dr. Wende said that Dr. Schamberg's microscopical reproductions corresponded with his own in appearance, showing the active proliferation of epithelium into the subcutaneous tissue; also in the appearance of the large vacuolated cells. From the time the case was first reported and up to that of the patient's death, he had developed two hundred skin cancers. The epithelioma near his rectum had been operated on four times. Dr. Wende believed that cases like the one reported by Dr. Schamberg and his own, offered something toward an explanation of the cause of the disease and it was important that they should be reported in full as has been done in the case of Dr. Schamberg.

DR. M. B. HARTZELL said he felt a special interest in this paper because he had seen the case which Dr. Schamberg had reported in detail. He was particularly interested in the statement made by the reader of the paper that he had found coal tar to be radioactive. This was very interesting and opened up a wide field of investigation. We should not lose sight of the fact, however, that physicists had found that many substances were more or less radioactive, and therefore we should be very careful about drawing any conclusions along these lines. Every sort of substance, almost, had been found to affect a photographic plate.

DR. J. A. FORDYCE thought the observation contained in Dr. Schamberg's paper that cancer might follow the irritation produced by tar, soot or tobacco, suggested that we might have cancer from primary irritation of the epithelium. The agent that produced the cancer might act directly on the cells, and was not necessarily secondary to connective tissue changes, as Ribbert had claimed.

Observations regarding the ætiology of cancer along the lines studied in Dr. Schamberg's paper were very interesting, and seemed to negative somewhat the parasitic theory of the disease. They pointed rather to the abolition of one function of the cell and the exaggeration of its reproductive function, as had been suggested by Oertel.

PLATE LXXIII.—To Illustrate Article by DR. JAY FRANK SCHAMBERG.



Fig. 2. Case I.
Multiple cancer of the skin in a tar worker.



Fig. 1. Case I.
Multiple cancer of the skin in a tar worker.

PLATE LXXIV.—To Illustrate Article by DR. JAY FRANK SCHAMBERG.



Fig. 3. Case 2.
Follicular keratoses with two small perifollicular growths or
“tar warts.”



Fig. 4. Case 3.
Tar keratoses and an ulcerative epithelioma.

PLATE LXXV.—To Illustrate Article by DR. JAY FRANK SCHAMBERG.



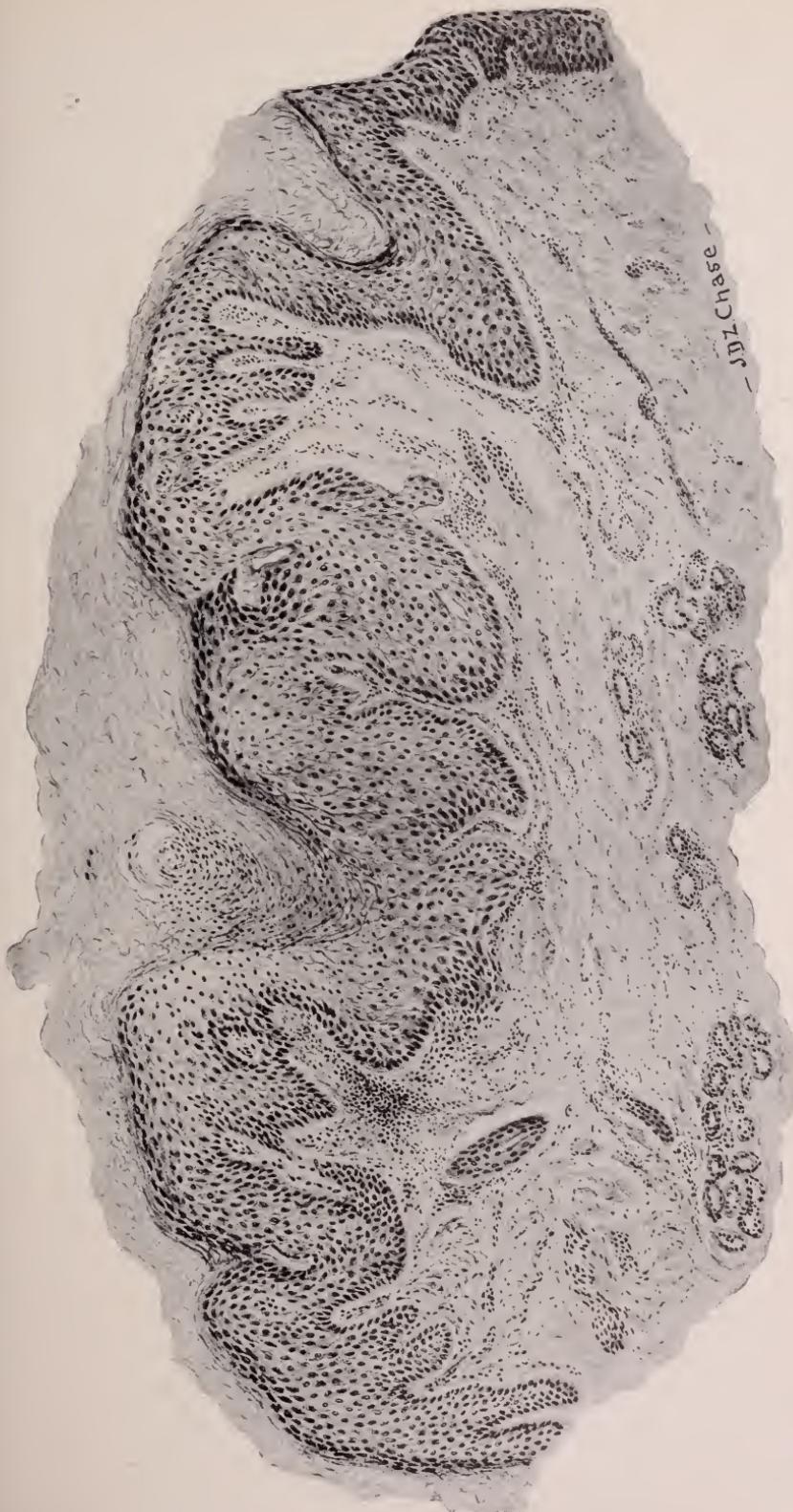
Fig. 7.

Shadow picture of a key, a cent and a metallic numeral.
Made by exposure to coal tar.



Fig. 6.

Showing the origin of the epithelial down-growth from a rete projection.
Nests of epithelial cells in the papillary layer of the corium.
Marked round cell infiltration.



Section showing general structure of a small epithelial nodule. The chief pathological alterations are (1) hyperkeratosis; (2) hyperplasia of the rete mucosum; (3) round cell infiltration; (4) budding from a rete projection.
Fig. 5.

DR. JAMES NEVINS HYDE said that his late colleague, Dr. Frank Montgomery, once took a small portrait of Finsen, together with a sensitive photographic plate, and placed them over his heart retaining them there during the hours of sleep. The following morning the plate showed an excellent reproduction of the picture.

Dr. Hyde asked Dr. Schamberg what the temperature was in which these tar workers were kept?

DR. SCHAMBERG replied that many of them worked in rather high temperatures and in the vapor arising from the boiling tar. The tar itself had a temperature of about 240° F.

DR. HYDE, referring to cancer of the scrotum, said that the boy chimney sweep of the last century was brushed up and down the chimney, his scrotum thus coming in contact with the soot—which produced the cancer.

DR. SAMUEL SHERWELL said that while he had long ago accepted the theory that more or less continuous irritation was an important aetiological factor in the production of cancer, it was rather remarkable that cancer so often occurred in parts that were not exposed to any such irritation. Cancer of the nose, for example, almost always occurred above or below the point where the eye-glasses were fixed. It was very common to see a mole on the face eventuate in cancer, while this was not so of moles on other parts of the body where they were constantly exposed to the irritation of the clothing. Similar instances would occur to all, and it made one a little doubtful as to the potency of irritation as a factor in these cases.

DR. MARTIN F. ENGMAN said there were at present more enthusiastic investigators in the cause of cancer than in any other field, and the results during the past two years were extremely suggestive.

The question of cancer in relation to radioactivity was particularly interesting to dermatologists, on account of the fact that cancer occurred on the exposed portions of the body more frequently than elsewhere. In old people, especially those who had been exposed to the elements, we had the so-called sailors' skin, but we undoubtedly had milder degrees of this same affection. The speaker said he had in mind two such cases that had been under his observation for the past five or six years. These patients developed on the arms, first pigmented spots, then hyperkeratoses; some of the latter seemed dangerously near epitheliomatus change. These patients were instructed to continually wear brown or tan sleeves, which seemed to cause an involution of the lesions by cutting off the actinic rays. No more lesions had appeared as the patients had continued to wear waists of this color.

DR. A. RAVOGLI said he had seen cases where acne-like pustules were produced from the application of tar. In a case of hyperkeratosis of the palms and feet, which he saw a year or two ago, an epithelioma developed on the bases of a number of small hyperkeratotic points resulting from the use of arsenic. In the same way, it was possible that these epitheliomata described by Dr. Schamberg might develop on the bases of acne pustules observed in tar eruptions.

DR. WILLIAM A. PUSEY said that in connection with the radioactive properties of tar, he thought the remarks of Dr. Hartzell exceedingly pertinent. It had been shown that radioactivity was possessed by many substances and if it were positively demonstrated that tar had a moderate degree of radioactivity, the speaker would not be inclined to attach importance to it in this connection. Radioactivity was simply one form of irritation that stimulated the processes that end in epithelioma. There was no reason, in estimating the factors that contribute to the production of epithelioma, to attach more importance to radioactivity than to other forms of irritation. Certainly in the case of epithelioma

arising from tar, paraffin, soot and other similar substances containing chemically irritating ingredients, it would be extremely difficult to establish that the source of irritation which results in epithelioma was radioactivity rather than chemical irritation.

DR. SCHAMBERG said that while he did not wish to say anything further regarding the suggested radioactivity possessed by tar, he did not see how we could dismiss tar as a factor in the production of cancer. There were many occupations in the course of which the men became besmeared with various chemicals without giving rise to cancer, but in tar workers we had this peculiar susceptibility to the development of cancer. The cancer might be due to some chemical irritant, but it might also be due to some hitherto unsuspected property of tar deposited in the rugæ of the scrotum or in the follicles of the skin. He felt that the subject deserved further investigation.

GRANULOMA PYOGENICUM.*

By UDO J. WILE, M. D., New York.

THERE are to-day probably no observers who believe in the existence of botryomycotic infection in man; indeed, in the light of recent investigation, the presence of a disease caused by infection with the botryomycetes has begun to be doubted even in animals.

The first case of human botryomycosis was reported in 1897 by Poncelet and Dor¹; these two observers called attention to the occurrence of tumor formation in man, which they deemed analogous to the botryomycosis in horses following castration. This last named condition had been known among veterinarians for many years previously, having been described in 1879 by Rivolta.² Following this writer's description, the literature of veterinary medicine contains many corroborative articles on the subject. Poncelet and Dor's report of the occurrence of botryomycosis in man, received almost immediate corroboration, notably by French authors and by Faber and Ten-Siethoff in Holland³: The observation of these last named observers is especially interesting in that their patient, a farmer's boy, had been taking care of a horse suffering with post-castration botryomycosis. The first suggestion of doubt as to the genuineness of human botryomycosis appears in a paper by Sabrazès and Laubie⁴ in 1899, entitled "Nonspécifité de la botryomycose," wherein these two authors assert the identity of the so-called botryomyces with the ordinary staphylococcus aureus. In the same year Jaboulay,⁵ and later, also Brault,⁶ proved conclusively that one could not differentiate pathologically between botryomycosis and simple granulation tissue. As far back as 1888, however, Kitt,⁷ while admitting the entity of botryomycosis, suggested that similar lesions might be produced by staphylococci. The year 1902 found the exposé completed, in the excellent monograph of Bodin,⁸ wherein this author, by careful bacteriological and inoculation experiments, proved the identity of the bodies described as botryomycetes with the yellow staphylococcus. Thus was "botryomycosis hominis" rejected as representing a clinical entity. From this time on, the lesions thus previously designated, have been called pseudo-botryomycosis by French writers. Hartzell⁹ suggested for them the name

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"*granuloma pyogenicum*"; and quite recently Küttner,¹⁰ after an exhaustive histological study, suggested the name "*granuloma telangiectodes*." This last designation has found favor in Germany; particularly in the writings of Reitmann¹¹ and Kreibich.¹²

It will be impossible in the space allotted to me, to enumerate or even to make mention of all the cases described in the literature. On account of their careful description, and because they represent excellent types of the lesion under discussion, I shall refer only to the cases of Hartzell, Küttner, Reitmann, Kreibich, Jacquet and Barré, to which I shall append two cases studied by myself. To save space, I shall abstract the cases only in very brief form:

HARTZELL'S CASE. Hartzell reported four cases, only one of which, however, he was able to study histologically.

"This case occurred in the person of a married woman thirty-five years old; the lesion being situated upon the tip of the little finger of the right hand. The growth, which lasted four months, was extremely sensitive and occasioned the patient much annoyance. It had been removed repeatedly by the family physician, only to return. In this case, as in the previous one, the curette was used, and a forty per cent. pyrogallol plaster applied. The tumor was extremely vascular, the little wound made by its removal bleeding very freely for a half-hour or more, ceasing only after firm constriction of the end of the finger for some time. There was no further attempt at reproduction after this treatment. Sections made of this tumor, showed that it was made up of a collection of cells, chiefly of the connective tissue type, and numerous blood vessels contained in an abundant fibrous stroma. A portion of its surface was covered by a thin layer of polygonal epithelium, in which the usual basal layer of cylindrical cells was for the most part absent; but the greater part was without epithelial covering, and was here and there slightly necrotic. Besides connective tissue cells, there were small collections of lymphocytes about some of the vessels, a very few "Mastzellen," and a moderate number of polynuclear leucocytes in the periphery of the tumor. One of the most marked features, was the great number of blood vessels—most of which were filled with blood—in the central parts of the sections; these were so numerous and large, as to present somewhat the appearance of an angioma. No trace of either sweat or sebaceous glands was observed in any of the many sections examined. Sections stained with Gram-Weigert and other stains, showed a moderate number of staphylococci in the superficial parts of the growth, but none of the yellow granular masses described by Poncet and Dor, the so-called botryomycetes."

KÜTTNER, in an exhaustive article entitled "*Ueber telangiectatische Granulome*," published the following four cases:

CASE 1. The patient, a farmer, seventy-three years of age, noticed, about four weeks previous to his admission, that there appeared on the ball of his left great toe, a pea-sized, blackish-colored lesion, which bled easily and caused him great pain. From this lesion, a tumor developed with great rapidity, and about fourteen days previously it ulcerated. A few days later a somewhat similar lesion broke out on the dorsum of the left foot. There was no history of trauma. On the ball of the left great toe was seen a round, definitely pedunculated, pigeon's egg-sized tumor. The surface was ulcerated, in some places

smooth, in others showing rough, uneven granulations. The slightest touch caused intense pain. Three other exactly similar but much smaller efflorescences were seen on the sole of the left foot; and a fifth lesion, about the size of a cherry, was found on the right leg. The microscopic examination of these tumors showed them to be composed of granulation tissue, extremely rich in new-formed blood vessels and cavernous blood spaces, which in places, gave the picture a striking resemblance to the structure of an angioma.

CASE II. The patient, a boy three years old, showed on the outer side of the right foot a small cherry-sized, mushroom-like tumor, attached to the skin by a definite pedicle. The lesion had developed within a few weeks, first as an infiltration, which rapidly became tumefied, then ulcerated, and reached its full development with little or no pain, but occasioning much bleeding. The surface was ulcerated, necrotic, in places covered with pus, and in other places covered with blackish or brownish-red exudate. Histological examination showed the tumor to be composed of areas of granulation tissue, through which were running large numbers of capillary blood vessels. The vascularity was more pronounced in the region of the pedicle of the tumor, and indeed in places the picture was similar to that seen in cavernous angioma. Infiltration with small round cells was also present, and occurred most markedly as one approached the ulcerated surface of the tumor.

CASE III. The patient fifty eight years of age, noticed, following a slight injury (thistle prick) to his left palm, that a callous area had developed at the site of the trivial injury. During the four months following, a tumor developed on this site, which recurred after removal, and when the patient presented himself to Küttner the following was noted: "On the ulnar side of the left palm was a small cherry-sized, definitely pedunculated tumor, the surface of which in some places was smooth, in others it presented small crevices which were filled with thick pus. The tumor secreted a foul-smelling, seropurulent exudate, and bled readily on the slightest touch. In this case as in the other two, the pathology of the tumor was that of a granuloma, extremely rich in new-formed blood vessels, the latter more numerous and larger near the surface of the tumor.

CASE IV." In this case the lesion occurred on the chin of a man fifty-eight years old. The tumor had developed during the six weeks previous to his examination, and was, as were the others attached to the underlying skin by a short pedicle. The histology of this lesion was entirely similar to that of the other three cases. Hand in hand with cellular inflammatory tissue, was the formation of new blood vessels and spaces. The picture at the periphery of the tumor, was modified by the presence of a rather intense round cell infiltration, which enveloped the entire circumference of the lesion. In this inflammatory zone—which corresponded to the ulcerated surface of the tumor—were noticed also cellular detritus, fibrin, and numerous cocci and diplococci which in part stained Gram negatively. In none of the above cases were any of the so-called botryomycetes found, nor was there any connection in the histological structure of the lesion with the sweat coils.

REITMANN, in 1908, in a paper entitled "Ueber das telangiectatische Granulome (Küttner)," adds to the hitherto reported cases the following one:

The patient, a boy fourteen years of age, suffering with lupus vulgaris, had on the back, near the angle of the right scapula, a group of small, bright-red, tumor-like efflorescences. These tumors were felt as firm, non-elastic, roundish masses in the skin. Under pressure with glass, the red color disappeared. A definite

pedicle could be noticed in one of the tumors at least. The history indicated that the lesion had begun about one and a quarter years previously as a pea-sized, easily bleeding, pedunculated tumor, which did not give rise to any subjective disturbances, and which recurred three times after simple ligation. The pathological anatomy of the tumor had been very carefully studied by Reitmann, and it was discussed at great length. In brief, the lesion was seen to be a vascular hypertrophy in the form of a tumor. The surface epithelium was unbroken. The body of the tumor itself consisted of granulation tissue, *i. e.*, embryonal cell elements, and large numbers of new-formed blood vessels. The increase in endothelial cell elements was by far the most striking feature of the sections. Plasma, round, and Mastzellen were present in moderate numbers, particularly at the periphery of the tumor. There was nowhere to be seen any evidence of the so-called botryomycetes; a bacteriological examination of the lesion, however, showed the presence in pure culture of the staphylococcus aureus.

KREIBICH, writing in the *Archiv für Dermatologie und Syphilis*, of last year, adds three cases of so-called "granuloma telangiectodes" to the previously published cases:

CASE I. A tumor on the index finger of the left hand, developed in six weeks after slight injury inflicted by a pair of scissors. The tumor was prominent, brownish-red in color, and about the size of a hazel nut. It resembled melan sarcoma, but was softer, and moreover its color was not due to pigment, but to its rich vascularity. The tumor was for the most part covered by epidermis, this however became thinner near the centre, and finally at the summit there was a small haemorrhagic crust, suggesting slight epithelial ulceration. The microscopic examination of this lesion revealed a tumor composed of young connective tissue and large numbers of blood vessels, for the most part new-formed capillaries. The skin immediately surrounding the confines of the tumor, showed a subacute inflammatory reaction, with round and plasma cells; the latter were also seen in moderate numbers within the tumor itself.

CASE II. In this case the patient noticed the lesion on the mucous membrane of the mouth, it having grown very rapidly during the four weeks which had elapsed since it first was noticed. The tumor showed itself as a pea-sized, bluish-red nodule, soft, and not definitely compressible. The epithelium covering the lesion was somewhat thickened at the periphery, but thinned out gradually toward the centre, at which point it showed a small ulceration. Microscopically this tumor was composed of a stroma, in which were large areas of spindle cells, also round cells, mast cells, and plasma cells; the striking feature again, however, was the very large number of blood spaces and vessels. These were for the most part simply spaces lined by a single layer of endothelium. At the periphery of the tumor the blood spaces were narrow, and they widened noticeably toward the centre of the tumor, at which point the entire field was taken up by large endothelial-lined cavities.

CASE III. The tumor arose following excision of a wart on the hand. Instead of healing, there grew out of the wound within four weeks, a hazel-nut sized, firm, bluish-red tumor, covered by a thin, shining epidermis, the centre of which showed a small brownish crust. Histologically the lesion showed a more regular structure than the two preceding cases, in so far as the connective tissue stroma was better developed. Nests of spindle cells enclosed varying numbers of round or obliquely-cut, endothelial-lined blood spaces and vessels. Scattered through the tumor with fairly even distribution were moderate numbers of darkly stained round cells, and a few plasma and mast cells. Evidences of acute exudative inflammation were seen only at the surface of the tumor, and evidently emanated from the ulcerated condition of the epithelium at that point.

In addition to these three cases, Kreibich describes another case, which he designates as a "granuloma simplex," and which on close analysis differentiates itself from the preceding cases only in the absence of a noticeable number of embryonal blood vessels. Histologically this case showed simple granulation tissue.

Still two more cases are cited in the author's paper, one of so-called granuloma gigantocellulare, and one of idiopathic haemorrhagic sarcoma (Kaposi), which, although they both rightly belong in the group of granulomata, I shall not abstract, as they have little bearing on the theme of this paper.

During the past year Jacquet and Barré, under the title "Granulome hypertrophique bénin," described a case which is herein included on account of its striking resemblance clinically and histologically with the first case to be described below by the writer.

This case occurred in a young man of eighteen, on whose cheek there developed, seventeen days after a trauma (fall from a horse), a raspberry-sized tumor, which grew very rapidly and bled easily. It was covered with pus, had a definite pedicle attaching it to the skin, and developed with marked subjective symptoms. The tumor was ablated, its base cauterized, and after this treatment it did not recur. The microscopic examination revealed a tumor, covered with a layer of pus elements, microorganisms, and fibrin, replacing for the most part the epithelial covering. The tumor itself was found to be composed of embryonal connective tissue, through which were running a large number of new-formed blood vessels of quite large calibre. These blood vessels, for the most part capillaries and veins, were surrounded by large numbers of red blood cells and a diffuse infiltration of leucocytes. The staphylococcus albus and aureus were cultivated from the lesion, but nowhere in the sections examined were any so-called yellow bodies or botryomycetes demonstrable.

During the year 1909 I had the opportunity of studying the following two cases:

CASE I. A little girl, eight years of age, presented herself on December 6, 1909, having been kindly referred to me by Dr. Theodore Jacobus. The history was as follows: Three months previously she had accidentally scratched herself on the right cheek, and very soon thereafter it was noticed by the child's parents that a small, red "pimple" formed, which rapidly increased in size—but without any subjective manifestations—to its present condition. My notes on the case when first seen, that is, three months after the lesion began to grow, are as follows: "On the right cheek, over the malar eminence, was a slightly larger than pea-sized, frambœsial tumor, bright red in color, attached to the skin by a thick pedicle. The tumor was fairly firm, but elastic. Its surface was not ulcerated, and except at the pedicle, which seemed moist with clear secretion, the tumor was dry. No telangiectases were noticeable at the base, and the tumor was not visibly or palpably pulsating. The rest of the cutaneous surface was entirely normal." Under novocaine the tumor was ablated and the actual galvano-cautery applied to its base. Healing took place, and up to the present there has been no recurrence. Cultures from the tumor-surface were unfortunately not taken at this time. On account of the rapid growth, the peduncular

character of the tumor, its frambœsial aspect, and its history as having started from a trauma, the clinical diagnosis of pseudo-botryomycosis or granuloma pyogenicum was made.

MICROSCOPICAL EXAMINATION. The tissue was hardened through alcohols of increasing strength, embedded and cut in celloidin, and sections were stained with eosin-hæmatoxylin, polychrome methylene blue, orcein and methyl green-pyronin (Unna-Pappenheim). The histological examination showed the following: Under the low power the tumor is seen to be surrounded by an intact epithelium, consisting of about five rows of cells. This epithelium encircles the tumor completely, except for a point corresponding to the pedicle where it stops abruptly. The body of the tumor is made up of a rather dense cellular stroma, in which are scattered a large number of smaller and larger blood spaces, many of them engorged with blood. The picture impresses one at first—as Küttner, Bodin, Jacquet, and others remarked in their cases—as though one were looking at an angioma (Fig. 1). The blood spaces are larger in number and distinctly more dilated in the peripheral parts of the tumor, and seem to bear an inverse ratio to the infiltration, that is, where the cellular infiltration is greatest, *e. g.*, at the pedicle, the angiomatic character is less marked. (This agrees with Küttner's observation). Under the high power the tumor reveals itself as composed of young connective tissue cells, with a moderate infiltration of lymphocytes and polynuclear leucocytes and plasma cells (Fig. 3). The three last-named types, while present in all parts of the mass, are marked in the pedicle, and they account for the before-mentioned, more densely cellular portion observed under the low power. Most striking under the high power, however, are the large number of small blood vessels and larger blood spaces, in which neither venous nor arterial structure is to be differentiated. The endothelium lining these spaces and vessels is normal in appearance. At the point of connection, between the tumor and the skin, corresponding to the base of the pedicle, a small amount of fibrin, cellular detritus, and numerous clumps of cocci are present. In no other part of the tumor are any microorganisms to be found.

To sum up briefly, we are dealing with a tumor, which clinically was characterized by rapid growth following a trivial injury, having a mushroom shape with a definite pedicle, and developing with little or no subjective symptoms. Microscopically, we find a tumor covered by an unbroken epithelium, the tumor itself being composed of connective tissue cells old and young, in which there are large numbers of new-formed blood vessels and spaces; near the base of the tumor moderate inflammatory reaction, and at this point also numerous micrococci. This case, then, agrees in general, clinically as well as histologically, with that of Bodin, with Kreibich's case, cases 1, 2 and 3 of Küttner, and also with Jacquet and Barré's case.

CASE II. This case occurred in a child two months old, which was brought to my clinic at the Beth-Israel Hospital on September 20, 1909. The mother says that the lesion appeared shortly after birth, and has steadily although slowly increased in size up to the present time. The notes on the examination at that time are as follows: "Hanging from the navel, and entirely hiding it, was a round, soft, moist tumor, about 1 cm. in diameter, covered with a sero-sanguinous secretion, and apparently attached to the underlying skin by a short, thick pedicle. On wiping with a piece of gauze, the tumor bled easily. The diagnosis of granuloma pyogenicum was considered as most likely on account of the rapid-

ity of growth, and the frambœsial character of the tumor. The small tumor-mass was snipped off with the scissors, and the freely bleeding stump was cauterized with pure carbolic acid. Up to the present the child has not been presented again, and it is presumed that there has been no recurrence.

MICROSCOPIC EXAMINATION. Preparation of the tissue as in Case I. Under the low power, this tumor is seen to be much more densely cellular and less vascular than the preceding one (Fig. 2). The surface shows only here and there the remains of a degenerated epithelial covering. The latter for the most part has ulcerated, and the tumor is surrounded by a mass of exuded blood, fibrin, and leucocytes. The body of the tumor is composed of granulation tissue, in which may be seen a fair number of small capillaries. These last are not suffused or distended, and their number is not a striking feature of the picture as in the first case. Under the high power the marked peripheral inflammatory reaction and haemorrhage are very evident. Large numbers of polynuclear leucocytes extend from the periphery into the body of the tumor quite some distance; indeed, a moderate infiltration of small round cells and leucocytes is present in all parts of the tumor. As made out by the high power, the cellular constituents of the tumor itself, are cells of the embryonal connective tissue type, and endothelial cells; the latter taking part in the formation of a moderate number of new-formed capillaries. The entire circumference of the tumor is studded with clumps of micrococci and singly lying organisms. The short pedicle of the tumor shows exactly the same structure as the body of the tumor itself.

To sum up, then, we are dealing here with a condition clinically characterized by a pedunculated, rapidly growing, slightly painful, easily bleeding tumor, which, microscopically, can be regarded as simple hypertrophic granulation tissue.

Analyzing these cases, and indeed all others reported on the subject, the following points stand out as common to practically all:

Clinically, the cases are characterized by rapidly growing lesions, starting definitely in some instances with an injury; at times painful, as often not so. Almost without exception the tumors are pedunculated, there is marked tendency to recurrence after removal, provided cauterization of the base has not been done. Superficial ulceration occurs in about half the number of cases, and where present gives rise to frequent and easily induced haemorrhage. Histologically too, there is a great uniformity in the findings. In all cases the tumor is one primarily of young connective tissue; in all, the presence of blood vessels in greater or less number is noticeable. These may be present in such large numbers (as in Küttner's, Bodin's, Kreibich's, and my first case) as to create a picture almost like that of an angioma; or they may be present in no larger numbers or degree than one ordinarily sees them in simple granulation tissue, as in Kreibich's case of granuloma simplex, and my second case. Leucocytic infiltration of the mononuclear and polynuclear variety was present to a greater or less extent in all cases; the latter depending, certainly to a degree at least, on the presence of superficial ulceration.

and subsequent infection. The plasma cell content of the tumors was in no case sufficiently striking to attract marked attention, although present to a degree in all cases.

Such an analysis leads to but one conclusion: We are dealing in this class of tumors with nothing more than circumscribed granulation tissue. The difference between granuloma simplex of Kreibich, and the granuloma telangiectodes of Küttner, indeed, the only difference of any note between any of the cases described, is in the number and size of the new capillary blood vessels. As to the cause of this difference, which is surely but one of degree, one can only speculate. In the first place it might be assumed to depend upon the normal vascularity of the site of the lesion; in the second place it may depend upon the proximity of the irritation or infecting agent to the blood vessels in the skin at the time of infection. Clinically no one will dispute the identity of all these neoplasms, and for myself, I can see no justification for the anatomical separation into the groups or classes which other writers have attempted. In that the tumors have absolutely no connection with sweat glands, I agree with Gahinet and Küttner, against the belief and early assertion of Poncet and Dor.

With regard to the situation of the tumors, it has been stated by some authors, Brocq¹⁷ for example, that the tumors always occur on the hands or feet. An analysis of all the cases, however, will show only a special predilection for these parts; in point of fact, they may arise anywhere. Savariaud and Deguy,¹⁸ Poncet. Delore,¹⁴ and others have observed them on the lip; Spourgitis,¹⁵ Jacquet and Barré,¹⁶ and myself on the cheek; Küttner on the chin; Poncet on the shoulder; Reitmann,¹¹ on the back; my second case occurred on the navel. Thus, while probably the largest number of cases have appeared on the hand due, surely, to the greater liability of this member to trauma, no part of the body may not be the seat of the lesion.

As has been said at the outset, the fungoid origin of the tumors is now quite generally rejected; in fact, all observers are at the present time quite willing to ascribe to the staphylococcus aureus the rôle of inciting factor. But the mode of the production of the tumors, seems to have caused undue concern to some observers, and is the subject of much surmise and speculation. Kreibich, in discussing this says: "In any event, since the staphylococcus produces pus formation, it is difficult to ascribe to it, the rôle of a chronic irritant in the tissues." I cannot agree with him here, for

certainly, under unfavorable conditions—*e. g.*, poor soil and diminished virulence—the staphylococcus can and does play the part of a chronic irritant. The cultural studies of pelvic inflammatory disease, and other chronic inflammations, in acne, for example, have shown this. Jacquet and Barré, in discussing this point in their case, point to the crust over the lesion present in that case. This, they think, may be a factor in producing the tumor, by acting as a source of irritation from the outside. This explanation is certainly logical for those cases in which a crust is present; but it cannot hold good for those tumors which appear without this evidence of outside irritation. Kreibich, in the same vein writes: “It is possible that these cocci (at the periphery of the lesion) are the cause of the occurrence of the leucocytes at the surface; likewise is it possible that the height to which the tumors grow, is in some measure dependent upon the bacteriological irritation, as in the case of condylomata acuminata; the primary and essential stimulant of the growth of these tumors, however, is probably not to be attributed to the organisms, at least not in those cases in which ulceration was not present at the outset.” This is an entirely logical view. But just as logical is it to believe that for the closed in tumors, *e. g.*, those in which ulceration of the surface has not occurred, under which class my first case would come—that here the tumor grows by constant irritation at its pedicle: and let it be noticed that in this place exclusively, were there micrococci and evidence of inflammatory reaction, *e. g.*, fibrin, blood, and leucocytes found, in marked contrast to their absence in other parts of the tumor. It seems to me that other writers, particularly the Germans, have tried to find a complicated explanation for a very simple fact. They all assume chronic irritation, of probably external origin, as the inciting factor in these tumors; but the question as to the position of these organisms—whether acting from below, in the pedicle of the tumor, or from the surface of the tumor—has been given undue prominence. Obviously either or both conditions may exist, and either or both may be responsible for the lesion. When one asks, however, why in any given case, this organism should cause the appearance of a frambœsial, highly vascular tumor, instead of its usual inflammatory products, speculation again steps to the fore. The possibility that in such cases we may be dealing with latent angiomatic tendencies or predispositions, seems hardly tenable.

With regard to the nomenclature, there has been much confusion. The name botryomycosis, of course, fell into disrepute as

soon as it was proved that true botryomycetic infection did not occur in man. What more natural then, that for a time the name pseudo-botryomycosis should have become popular. French authors, with whom this name originated, still adhere to it. Hartzell, after studying his and other cases, suggested for these tumors the name granuloma pyogenicum. Küttner, basing his idea apparently upon the histological structure, suggests the name granuloma telangiectodes as more fitting. As has been said before, this name seems to have found especial favor among German observers, notably with Reitmann and Kreibich; the latter believes the essential type of granuloma to be the so-called granuloma simplex, of which he reports one case, and to which category Case 2, reported by me, would belong. Granuloma telangiectodes, and granuloma gigantocellulare, are, according to him, but variations of granuloma simplex. In this view the writer concurs. As stated above, the difference between the most widely different forms, from a histological standpoint, is merely one of degree of inflammation, and greater or less vascularity. Such being the case then, the differentiation into such groups as suggested by Kreibich, seems to me superfluous. As may be noticed, I have employed in my title the name suggested by Hartzell. Küttner in writing of this designation, says: "I believe that the appellation granuloma telangiectodes is a more accurate one than that recently suggested by Hartzell, of granuloma pyogenicum, for after all every granuloma is pyogenic." Whatever other objection Küttner may have to Hartzell's title, this one, most certainly, does not hold good. Syphilis, mycosis fungoides and tuberculosis, occur in the skin as granulomata: they most certainly are not pyogenic. Küttner's designation (granuloma telangiectodes) I believe to be open to some objections: In the first place it is not a broad enough term to include all forms; as for example Kreibich's granuloma simplex and granuloma gigantocellulare. Secondly the term telangiectasis is usually applied to macroscopic capillary and venous dilatation, and not to microscopic changes, on the basis of which Küttner has chosen his name. The term granuloma pyogenicum recommends itself in that it is broad enough to include all forms, irrespective of their minute microscopic anatomic differences, and in that it is atiologically suggestive.

The tendency to recurrence after excision, suggests the remedial procedure for such occurrence, namely cauterization of the base of the tumor. When this has been practiced recurrence does not take place. Apparently the choice of the cautery agent is not im-

PLATE LXXVII. To Illustrate Article by UDO J. WILE, M. D.

Fig.1.

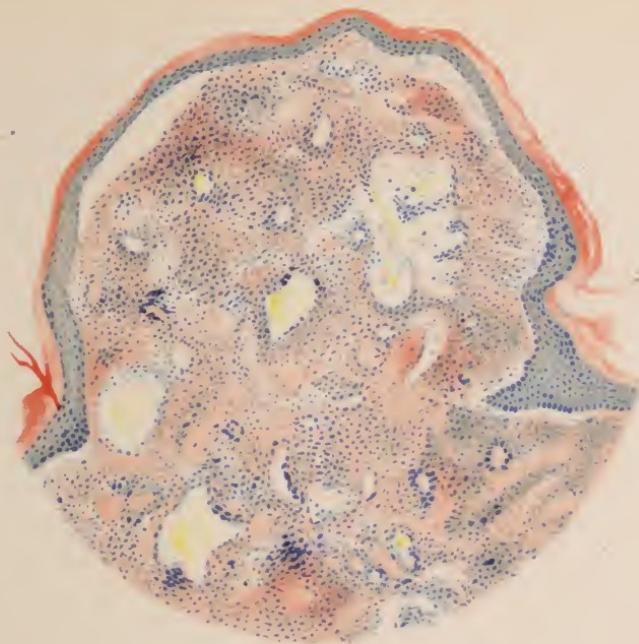


Fig.2.

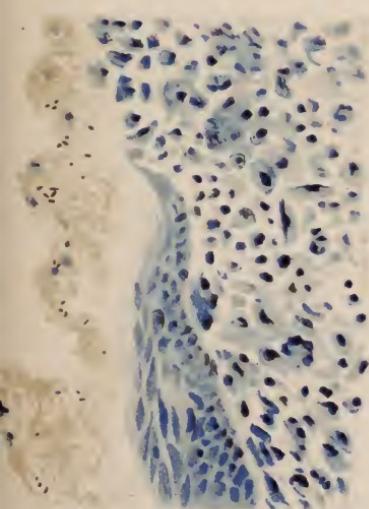
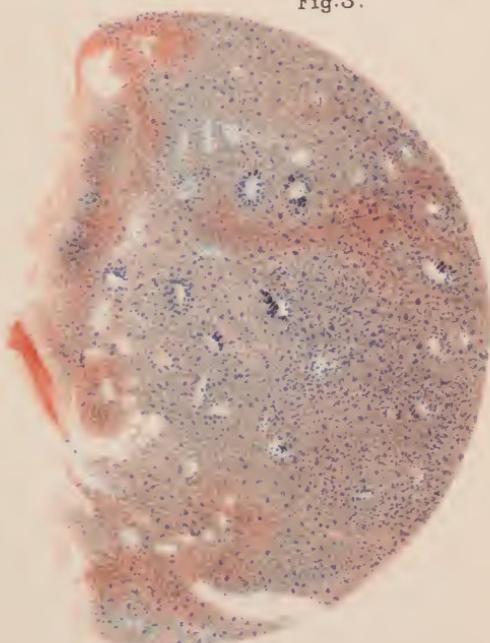


Fig.3.



portant; the various acid and chemical as well as the actual cauteries seem to have been equally successful in various observers' hands. In my cases, the galvano-cautery served adequately in one instance, and pure carbolic acid in the other.

From the foregoing may be concluded:

1. The entire group of so-called pseudo-botryomycosis, granuloma simplex, granuloma telangiectodes, and granuloma pyogenicum, may be grouped in one class, and may be regarded as ordinary granulation tissue, appearing, for as yet undetermined reasons, in the unusual form of a tumor.

2. The etiological factor is not a fungus, but probably the staphylococcus aureus, perhaps in an unfavorable soil or in an attenuated form.

3. The histological changes are essentially the same for all forms, minor differences being simply in degree of vascularity and inflammation.

4. In no instance is there any connection between these tumors and the sweat-glands.

5. Although never malignant, the growths tend to recur, unless cauterization of the base is practiced.

6. The therapy consists in removal and cauterization.

7. Granuloma pyogenicum is considered the best name thus far suggested, for previously mentioned reasons.*

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* Since the writing of this paper, an excellent article on the same subject has appeared in the *Annales de dermatologie et syphiligraphie*, by Dr. Charles Lenormant, entitled "Sur la prétendue botryomycose humaine." Lenormant sets forth his clinical and histological findings in five cases of so-called human botryomycosis. His conclusions in general coincide with those set forth above by the writer. He likewise asks for the abandonment of the designation "botryomycosis," and proposes as more fitting the name "granulome pédiculé" suggested by Frédéric. This name, while it is certainly more fitting, is not capable of good translation into English and German, and is thus not as able of general application as the term "granuloma pyogenicum."

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SOCIETY TRANSACTIONS

NEW YORK DERMATOLOGICAL SOCIETY.

Regular Meeting, April 26, 1910.

DR. SAMUEL SHERWELL, President.

Case for Diagnosis. Presented by DR. HOWARD FOX.

The patient was a woman, twenty-eight years old, domestic, born in Sweden. She gave no family nor personal history of tuberculosis and no history of syphilis. Four years ago she first noticed an eruption upon the inner aspect of the right thigh. She stated that at first the lesions were more red in color and more elevated than at present. The eruption had never occasioned any itching, so that until her present visit to the clinic she had never sought medical aid. The eruption consisted of irregularly grouped, flattened, somewhat scaly lesions. They were soft, of a dull-ham color, very closely simulating the color of lupus nodules. No typical nodules of that affection could, however, be seen. There was little infiltration and no evidence of necrosis or scarring. The lesion, according to the patient's statement, had never ulcerated. The patches did not assume any particular configuration that would suggest a tubercular syphilide. Some of the lesions consisted of yellowish-brown pigmentation which, according to the patient's statement, had formerly been reddish and elevated. The pigmentation as well as a certain shiny appearance of some of the lesions strongly suggested lichen planus. The absence, however, of typical lichen planus papules and more especially the color and lack of itching did not favor this diagnosis. The Wassermann reaction was negative, as was also the von Pirquet test. The urine showed no abnormal constituents. The result of a biopsy, Dr. Fox said, would be given at the next meeting.

DR. BRONSON said that he could not reconcile the diagnosis to lichen planus. Besides the absence of itching, there was the peculiar, centrifugal appearance, showing a tendency to heal at the centre while extending at the periphery, which was not characteristic of lichen planus.

DR. GEORGE HENRY FOX said that at first he thought the eruption was lichen planus. It was in the favorite locality of that disease, and had circular patches with pigmentation in the centres (lichen planus craters) and a shining edge, but there were no isolated lichen planus lesions in this case, and it had not the peculiar color of lichen planus. Some of the small lesions looked like lupus vulgaris. He felt confident that it was not syphilis.

DR. ELLIOT regarded it as a case of lichen planus, and not having anything to do with syphilis.

DRS. KLOTZ and WHITEHOUSE considered it to be a case of lichen planus.

DR. JACKSON said that he was no wiser regarding the case than when he first

saw it in the clinic. It was extraordinary for lichen planus to have no itching; there were no lichen planus papules, and the color was not right. He did not think it was syphilis, and he could not offer a diagnosis. He would advise having a biopsy made, which might solve the problem.

DR. HOWARD FOX said that since the patient had been under observation she had received very little mercury. He had seen practically no change in the condition. He considered lichen planus the most probable diagnosis.

Urticaria Pigmentosa. Presented by DR. GEORGE HENRY FOX.

The patient was a girl eighteen months old, born in the United States of Russian parents. The present eruption began when the child was two months old, and had continued up to the present time without interruption. It consisted chiefly of macules scattered uniformly without grouping over the greater surface of the body. The color of the lesions was a yellowish brown, being often very indistinct. Upon friction it was possible to cause some of the macules to become reddened and slightly elevated. The palms, soles, scalp, and greater part of the face were unaffected. Upon the trunk were seen a number of bullous lesions mostly in retrogression, not assuming any particular grouping and not showing any marked evidence of scratching. The general health had always been excellent.

DR. JOHNSTON thought it was dermatitis herpetiformis.

DR. ELLIOT failed to see any element of urticaria pigmentosa in the case; there had never been any vesicles or bullæ seen in urticaria pigmentosa, though they might occur in cases of urticaria followed by pigmentary deposits. The latter were not, however, urticaria pigmentosa. His diagnosis was dermatitis herpetiformis and a number of cases after vaccination and similar to this one had been reported.

DR. BRONSON agreed with the diagnosis of dermatitis herpetiformis, although it was surprising to see that disease in so young a child.

DR. WHITEHOUSE also agreed with the diagnosis of dermatitis herpetiformis, although he had never before seen it in a child of that age, but the bullæ, the presence of pigmentation, and the changing character of the lesions were more like dermatitis herpetiformis than anything else.

DR. KLOTZ said that although the child was very young to have the peculiar symptoms of urticaria pigmentosa he was inclined to favor that diagnosis.

DR. TRIMBLE said that he had seen the case when it first appeared at the clinic, and the opinion of those who saw it at that time was divided between dermatitis herpetiformis and urticaria pigmentosa; he was inclined, then as now, to the latter diagnosis. The lesions seemed almost universal and he had not noticed any special grouping. Although he had never before seen a case of urticaria pigmentosa with bullæ, they had been described in the literature. One could produce a wheel on the child very easily by friction, which was not usually the case with dermatitis herpetiformis.

DR. SHERWELL said that he could not reconcile the case with the ordinary notions of dermatitis herpetiformis.

DR. GEORGE HENRY FOX said that he had seen the case for only a few moments in the clinic, but the lesions were not evanescent; they had existed right along since the child was born; there was no special grouping, but it was scattered all over the body. Cases of urticaria pigmentosa did not, he said, generally have vesicular lesions, but they had been described.

Lupus Erythematosus of the Scalp. Presented by DR. JACKSON.

The patient was a woman forty years of age, unmarried. The case was of especial interest because the woman had had what was diagnosed as tuberculosis of the lungs, and some eighteen months ago had received a number of injections of tuberculin. The course of the tuberculosis was said to have been checked by the treatment. The lupus began about two years ago, since which time new areas had appeared. She had four patches on the vertex of the skull, three on the right and four on the left side of her scalp. They varied in diameter from about one-quarter of an inch to one and a half inches, and were generally round in shape; in the middle they were red, the color shading off to pink towards the circumference. They were completely bald, slightly depressed, and evidently cicatricial. The larger patches were covered with large, thin, almost papery scales. The hair at the edge of the patches came out easily and showed atrophic bulbs. The patient complained of itching. On the face there was one small patch similar to those on the scalp. It was proposed to treat the patches with carbonic acid snow.

The diagnosis was accepted by all the members.

Lupus Erythematosus Treated with Solid Carbon Dioxide. Presented by DR. TRIMBLE.

The lesion had been entirely covered with three different applications of the snow, apparently with a very fair result, only it reappeared after appearing to be cured. The redness in the lesion seemed to run away, so to speak, from the application, thus making the redness at the periphery more intense than formerly. The last treatment was made about three weeks ago, and the scab had just dropped off. The application was made for about thirty seconds at moderate pressure. The general result seemed to be fairly good, but the disease was returning in the same place.

DR. WHITEHOUSE, DR. JACKSON, and DR. DADE pronounced it an excellent result.

DR. TRIMBLE said that he thought it a very good result, but wondered if he could not have produced the same effect with some other treatment. His main object in showing it was on account of the recurrence.

Von Recklinghausen's Disease. Presented by DR. HOWARD FOX.

The patient was a woman, single, thirty years old, born in the United States, a librarian by occupation. Her parents, two sisters and a brother were living and healthy. To her knowledge no relative had ever suffered from a disease similar to the present one. As a child she had suffered from scarlet fever, measles, mumps, and whooping-cough. Menstruation began at sixteen and had always been regular. Her general health had always been good until three years ago, when she began to be rather nervous and irritable. Among the various cutaneous lesions

the larger patches of pigmentation were of the longest duration. The patient stated that they had existed as long as she could remember. The small pigmented lesions had all appeared within the past five or six years. One tumor upon the arm had existed for ten years, whereas all of the smaller tumors had first been noticed three or four years previously. The cushion-like lesion of the sole had existed for fifteen years. None of the lesions had ever occasioned any pain. She had complained at times, however, of slight itching. Examination showed the presence of about a dozen round or oval, yellowish or café au lait, patches of pigmentation. These lesions were mostly confined to the trunk, the largest measuring two and a half inches in length. Upon the trunk and extremities, especially in the scapular region, were seen immense numbers of pin head to split-pea-sized, yellowish to dark-brownish, pigmented macules. About the mouth, chin, arms and trunk, were seen numerous pea-sized, slightly elevated, semi-solid lesions. There were also half a dozen larger tumors, the largest being the size of a hazel nut. This was one of the so-called bladder-like lesions, which could be partially reduced like a hernia. Several hard, small, subcutaneous nodules were also to be felt upon the forearms. The scalp, mouth, forehead, cheeks, and palms were unaffected. There were comparatively few lesions upon the lower extremities below the knees. A curious lesion was noted upon the sole of the left foot, consisting of an elevated, soft, cushion-like mass about four inches in length. After considerable walking or standing, some discomfort was often felt from the pressure of this swelling. During the examination the patient plainly showed her nervous irritability and lack of self-control.

DR. FORDYCE called attention to a case of fibroma molluscum which he had photographed fifteen years before and lately had under his observation and taken a second photograph. It was interesting to observe the increase in the number and size of the tumors in that time. The patient showed marked mental hebetude and, in addition, he had developed certain symptoms pointing to involvement of the central nervous system.

DR. GEORGE HENRY FOX said that a microscopic examination would reveal whether the lesions were fibromata or neurofibromata. The nervous symptoms combined with the small tumors and pigmentation would seem to class it as the disease described by von Recklinghausen.

DR. ELLIOT thought it was molluscum fibrosum; he saw no reason to call it neurofibroma. In one case that he had had of neurofibroma, the tumors were all on the large nerves. Von Recklinghausen had expressed the idea that fibroma molluscum was of nervous origin, but not neurofibroma. All the cases of neurofibroma, that he himself had examined, were hard tumors and were not the soft fibromata such as were seen in fibroma molluscum. It might be classed as molluscum fibrosum or von Recklinghausen's disease.

Case for Diagnosis (Lepra ?). Presented by DR. SHERWELL.

The patient was a male, aged fifty-four, and a native of Saint Lucia, W. I. He had always been well with the exception of an acci-

dent to his foot, received in Panama, where he had been employed for ten years. He stated that the present, somewhat nodular, eruption had been present for less than two months. The speaker said that while he had not been able to make a positive diagnosis, he thought that the lobes of the ears were affected, and that there was some thickening of the right ulna nerve. The man stated that the eruption was pruritic. There was no pain.

DR. FORDYCE said that by exclusion he would make a diagnosis of beginning tubercular leprosy.

DR. ELLIOT said that he thought the case was leprosy.

DR. HOLDER thought the face presented the appearance of leprosy. The course of the nodular type of leprosy, he thought, was very much more rapid than the atrophic type.

DR. TRIMBLE said that from what he had seen at this examination, he thought the case not one of leprosy.

DR. KLOTZ agreed with the diagnosis of leprosy.

DR. KINGSBURY said the history as supplied by the patient did not seem to be very reliable. The man evidently believed that the affection was a serious one, but he appeared to be on the defensive in answering any questions relating to symptoms of leprosy. He admitted hyperesthesia, however, stating that there was increased sensation in some of the more recent lesions. The case was one that was suspicious of leprosy, to say the least.

DR. WHITEHOUSE said that he would like to make further observations before making a definite diagnosis, but he thought it was a leprous condition.

DR. JACKSON and DR. DADE both thought it was leprosy..

Leprosy of Mixed Type. Presented by DR. JACKSON.

The patient was a man born in the Barbadoes, a West Indian. The disease was said to have begun about a year ago as a small red spot under the left eye. Six months afterward, tubercles appeared in the lobes of the ears. He gave no history of illness, and complained only of some loss of power in his arms. He had masses of tubercles in the lobes of his ears; some small papules of brownish-red color on both cheeks; many mahogany-red macules on his arms and thighs, some of which were infiltrated and some had assumed the ring form; a wide mahogany-red streak across the upper anterior face of the left thigh; and a number of pigmented, round patches on the lower part of his back. The patches were anæsthetic. There were marked enlargement of both ulnar nerves. The patient had been treated with chaulmoogra oil.

The diagnosis was generally accepted.

Case for Diagnosis. Presented by DR. JACKSON.

The patient was a man, thirty-eight years of age, who stated that the disease began six years ago and he had never been well since. The eruption consisted of pin-head-sized, brownish-red papules that were grouped in irregularly shaped and variously sized patches, but not aggregated, so that there was much sound skin in the patches. The small groups were not scaly, while the larger ones were decidedly so. Looking

at the affected parts by a cross-light they were seen to be superficially atrophied. The larger patches were said to be stationary. On the back of the hands some papules were said to come and go. There were no subjective symptoms beyond slight itching at times. The disease was located in the right axilla and on the right shoulder and down the left arm to the elbow, over both buttocks, inner sides of thighs, and lower part of the abdomen. There was a large pigmented area on the lower part of the back, and an eczema marginatum of the crotch.

DR. WHITEHOUSE said that the case belonged to the group of parapsoriasis.

DR. HOWARD FOX said that the case did not correspond very closely to any of the three classes of parapsoriasis described by Brocq. As the eruption, however, was chronic, scaly, superficial, non-pruritic and resistant to treatment he would make a probable diagnosis of some form of parapsoriasis.

DR. TRIMBLE was inclined to agree with the diagnosis of parapsoriasis, although it did not conform to any variety described by Brocq; however, there might be some atypical forms other than those described by Brocq. The history given was much like parapsoriasis. The patient had presented himself a year and a half or two years ago at Bellevue (Dr. Fordyce's clinic) and that diagnosis was made by exclusion. When first seen by Dr. Fordyce the scaling borders of the lesions were so marked that he suggested it might be a parasitic condition, and repeated examinations were made of the scales, and on the last examination some mycelium were found which seemed to be of a parasitic nature; whether this was independent of the original lesion was a question.

DR. ROBINSON said that the atrophy seemed to be fairly well marked, and that would tend to rule out parapsoriasis. The term parapsoriasis was apparently applied at times to very different pathological conditions.

DR. FORDYCE said his chief reason for examining the scales a year and a half ago was that he had observed a case of favus of the scalp with scaling lesions on the body in which the parakeratosis resembled that met with in this case, and he thought that it might be an attenuated form of favus, but this particular case seemed to have no resemblance to favus.

DR. GEORGE HENRY FOX said that it seemed to be a decided case of atrophia cutis, which would go on in a few years to the development of a wrinkled surface. The appearance of red papules near these patches was very common, and resembled patches of eczema; there was certainly atrophy, and nothing to suggest parapsoriasis except the slight scaling.

DR. ELLIOT said that it did not mean much so far as the name was concerned, for in all these cases of parapsoriasis most men advanced a new name. It appeared to him to belong to the group classified by Crocker, who had brought together all the different cases under the heading of lichen variegatus. He recalled a private case of a few years back, a child of about thirteen years, whose head, face, and entire body were covered with lesions which left a marked atrophy when they disappeared. The child was now pitted all over as though she had had small-pox. In many respects the lesions resembled lichen planus, but were more or less gelatinous and soft in appearance. The speaker said that DR. JACKSON would probably remember the case they had seen last Fall which was also very chronic, and which had been subjected to severe anti-syphilitic treatment, and had been salivated twice. In that case the lesions were smaller, and he had made the diagnosis of lichen variegatus. It was still unchanged. A characteristic of these cases of parapsoriasis, or lichen planus, or nodular lichen, the aetiology of which was not understood, was that they were absolutely uninfluenced by any treatment. The case to which he first

referred was unique in getting well under the influence of the X-ray applied by Gilchrist. Brocq had reported some cases that were benefited by intense pyrogallic acid treatment, but the amount of benefit was very slight. Dr. Elliot said that he regarded the present case as belonging to that group of diseases of unknown aetiology.

DR. JACKSON said that he regarded it as a case of parapsoriasis, and intended to try the X-ray.

Congenital Heart Disease. Presented by DR. HOWARD FOX.

The patient was a boy four years of age. His father, mother and two sisters were living and healthy. No member of his family had ever suffered from a similar affection. When the patient was eight months old, his mother stated that his cheeks, ears, hands and feet became bluish red and cold. This condition, which followed vaccination, had continued to the present time. The parts affected were always worse in winter, especially when the weather was severe. Any wounds received had always healed with slowness, the vaccination sore having taken eight months to cicatrize. Hæmorrhage of any sort had also been difficult to control. The mother stated that on several occasions, without any apparent traumatism, small bleeding points had been noted upon the cheeks. The child had suffered from dyspnœa on exertion and had become cyanotic, often alarmingly so, from the exertion of running or crying. The appetite had always been poor. Examination showed the child to be fat and robust, but small for his age.

His ears, cheeks, hands, and feet presented a marked bluish-red hyperæmia, disappearing upon pressure and returning slowly when the pressure was removed. The temperature of the affected parts was decidedly lowered. The cheeks were rough to the touch and presented a moderately hard œdema. Examination of the heart revealed a loud, blowing, systolic murmur, heard over the entire chest and over the scapular region. Its intensity was greatest over the second left intercostal space at the cartilaginous junction. A probable diagnosis of patent ductus arteriosus and pulmonary stenosis was made by Dr. La Fetra. A blood count showed 5,088,000 red cells.

Paget's Disease of the Nipple. Presented by DR. FORDYCE.

The patient was a Russian woman about fifty-five years of age. She stated that the condition of the breast had existed for about two years. It presented the typical picture of Paget's disease, a dark-red, granular, exuding surface, with a very sharply defined periphery and here and there evidence of beginning cicatrization in the centre of the lesion. A group of secondary, small, ulcerated and encrusted lesions were present outside of the original patch. These lesions suggested autoinoculation or the breaking down of a lymphangitis which radiated for a distance of about three inches from the periphery of the patch. The entire breast was the site of a carcinoma, which was not sharply circumscribed, but seemed to involve the entire breast, probably due to

the simultaneous infection of the lactiferous ducts. In addition, she had an enlarged node in the right axilla.

DR. SHERWELL said that he had presented a case of Paget's disease before the Society in 1882; Paget had described the condition in the London Congress in 1881, so the speaker's case was the first to be recorded in this country.

Tuberculosis of the Hand. Presented by DR. JACKSON.

The patient was a negro boy thirteen years old. The eruption was on the back of his left hand and had been there for several years. Some time ago the little finger was amputated, probably for involvement of the bones. There was a large thickened patch on the back of the hand which showed here and there ulcerations and nodules. The patch had a margin resembling that of a tubercular syphilide. A Wassermann test made by Dr. Howard Fox was negative, while the tuberculin test was positive. The case had made marked improvement under twenty per cent. salicylic acid.

Mycosis Fungoides. Presented by DR. WHITEHOUSE.

The patient presented himself a few days ago with an eruption which he stated began about three years ago as an eczematous condition, which had become very much worse last October. From October to February it receded but did not disappear, and in February it became worse again, and developed a tumor-like condition, besides the erythematous plaques which remained all the time. It seemed to be a mycosis fungoides with an eczematous element.

DR. FORDYCE said that it was a typical case of mycosis fungoides.

DR. JACKSON said that it was an undoubted case of mycosis fungoides. He had treated a similar case with the X-ray, the tube being twelve inches away from the body. Itching ceased at once and after a few months there was not a tumor left. This patient had been a missionary in Porto Rico, and the disease developed there.

DR. ELLIOT agreed with the diagnosis, and told of another case which he had seen in 1892, when the trouble had been present for some three years. It was in the erythematous stage and the tumors were on the left hip alone. A tumor was excised and examined, microscopically, positively establishing the diagnosis. The man was still alive and well; after eighteen years. He had had returns of the tumors, and they had always been localized on the right hip or the right side; once on the penis. The erythematous condition persisted to a certain extent, but at present there was very little left—only a few traces on the left shoulder. That was a very extraordinary case of mycosis fungoides, considering the fact that it was usually considered that after the tumors began to appear, the patient generally died in from three to five years. This man seemed perfectly well in every way. He went through all the usual treatments, chaulmoogra oil, X-ray application, etc., but found the best results, when the tumor began to appear, by burning it out with the Pacquelin cautery. It would heal up and leave a scar, and that was the end of the tumor, but that did not explain the fact of his remaining well. Even with the X-ray the tumors would disappear, but the metastases took place in the brain or elsewhere and the patients died. This case had run a course of eighteen years, since 1892.

DR. KINGSBURY said that the case was one of considerable interest to him, for he had had the patient under observation about six months ago when there were only a few plaques on the back. Since then the man had lost weight and strength and there had been a great increase in the number of lesions. Dr. Kingsbury said that he regarded the prognosis as very unfavorable and did not believe that the X-ray would be of much benefit in this particular case.

DR. HOWARD FOX suggested that it would be interesting to use an extract of one of the tumors, as antigen as Gaucher had done, to test for complement fixation in cases of mycosis fungoides.

Case for Diagnosis. Presented by DR. FORDYCE.

The patient was a man about forty years of age, who gave a history of a recurring vesicular and bullous eruption localized chiefly in the axillary and inguinal regions. He stated that for seven years the eruption had recurred once or twice each year, the disappearance of the vesicles and bullæ leaving pigmented lesions and in some cases slight thickening of the epidermis suggesting warty papillomata. The patient said that he had lived in Cuba for three years, during which time the disease made its first appearance. The impression made from the observation of the lesions and the history which the patient gave was that the eruption was due to some form of toxæmia, which in process of elimination gave rise to the vesicular and bullous eruption.

DR. WHITENHOUSE suggested that it might be a case of syphilis. The distinct grouping and the rather large papules on the left of the abdomen suggested the possibility of that condition, though he did not care to make a positive diagnosis.

DR. TRIMBLE called attention to the fact that at a former meeting of the Society he had presented a drug eruption which was bullous and recurred in the same location each time the drug was taken, and suggested that this might be a similar condition. The history of seven years would seem to eliminate that, but the man had lived in Cuba for some time, and may have had malaria and taken quinine continually, which might have brought out such a condition.

Dermatitis Venenata. Presented by DR. HOWARD FOX.

The patient was a man, twenty-three years old, an engineer by occupation. He had always suffered more or less from hyperidrosis of the hands and feet. His health had otherwise been excellent. About a month ago he had purchased two pairs of black cotton socks of a rather cheap quality. He had worn one pair of socks for four days, without noticing anything abnormal about his feet. He had then worn the second pair for twenty-four hours, at the end of which time he had noticed an eruption on both feet. Ten days later the patient was seen for the first time at the clinic. He then presented a general dermatitis of both feet, extending above the ankles and corresponding to the area covered by the shoes. The greater part of this surface was bluish red, smooth and dry. It showed evidence of itching which the patient said had prevented sleep for three nights. The greater portion of the plantar and lateral aspects of the feet and to a less extent the

dorsal aspects of the toes presented a brilliant orange color. The color could not be removed by soap and water, or by alcohol, olive oil, etc. During the past three weeks the general itching and redness had greatly lessened and the orange staining was also much less marked than when the patient was first observed.

PHILADELPHIA DERMATOLOGICAL SOCIETY.

The regular monthly meeting of the Philadelphia Dermatological Society was held in the Gross Room, of the College of Physicians Building, on Monday evening, March 14, 1910. DR. CHARLES N. DAVIS, presiding.

Case for Diagnosis. Presented by DR. DAVIS.

The patient presented was a healthy male of sixty-eight years, who denied ever having had syphilis. Seven months ago the patient first noticed an infection of the finger, resembling a "run-around." The redness of the ring finger was followed by considerable swelling; the entire right hand, two months later, became considerably swollen. A physician, in the patient's home town, then incised the finger to the bone, removing also the nail; no pus was found; a thick black material with serum exuded. In the middle of January the nail was thickened, at the proximal end, the distal portion not being completely grown. The finger was spindle shaped with considerable swelling at the second joint; the skin was stretched and glazed in appearance and painful on pressure. There were seventeen pea- to almond-sized swellings on the forearm, none above the elbow, of the cold-abscess type, attached to the skin. They were fluctuating and soft, not painful. The ulnar side of the arm was alone involved, the lesions extending up the forearm in a broken-chain arrangement, following the lymphatic system. Eight of these nodules were in a somewhat circinate group in the neighborhood of the elbow. The patient complained of slight pruritus. The patient had an old orchitis of the right testicle. Dr. Le Conte operated on the patient the latter part of January, incising, curetting and packing each tumor. No pus was found at the time of operation, a pearl-shaped and pea-sized body, however, was expressed from each tumor. The skin surface was entirely healed in a month's time. Before the lesions were incised, the patient was given eight rubbings of the official mercurial ointment, one dram daily without result. Smears and cultural experiments were negative for sporotrichosis, blastomycosis, or tuberculosis. Smears stained in methylene blue showed only a few lymphocytes and what appeared to be naked nuclei; no organisms were found. The specimen for examination, consisted of innumerable small, hard, round, semi-translucent granules, some of which were surrounded by fat. The fresh preparation exhibited a mass of cells

and what looked like elastic tissue in the centres, with fat about the margins. The sections were made through many of the small nodules and one through the skin, including a granule.

The central portion of the section was formed of a granulation tissue rich in fibroblasts, small round cells, epithelioid cells, and plasma cells. Occasionally small round cells and plasma cells occurred in localized collections. There were a few polymorphonuclear leucocytes. There was a fair number of giant cells of the Langerhans type and of various sizes, scattered in the section. In the centre of some of the nodules, and scattered irregularly through others, were areas of coagulation necrosis, staining diffusely pink but having a fibrillated appearance. One nodule showed a large area of this kind. There was a fair number of blood vessels and surrounding them the cellular infiltration and proliferation was most marked. The section made directly through the skin showed that these nodules were situated in the subcutaneous tissue. Dr. Longcope made the pathological diagnosis of syphilis of the subcutaneous tissue—gumma.

Dr. Davis said, that notwithstanding the pathological diagnosis, he was still inclined to believe that the present case came under the heading of sporotrichosis, as he had never seen a case of syphilis with so many and such an arrangement of nodules, following the lymphatic system so closely. He thought the demonstration of the cause of sporotrichosis was very difficult and possibly in this way had been overlooked.

DR. STELWAGON thought the case was not one of syphilis as it not only did not resemble that disease clinically, but the present condition corresponded to the description of the American cases of sporotrichosis.

DR. HARTZELL said he considered the present condition, was one of plainly marked lymphangitis. The cause of the outbreak he was not prepared to say. The history of the eruption and the character of the lesions were absolutely against syphilis, and he thought that disease could not be considered in the diagnosis. It was a well-known fact that new growths resemble each other markedly under the microscope.

Case for Diagnosis (Previously Exhibited). Presented by DR. SCHAMBERG.

The present case had been presented to the Society at previous meetings by Dr. Schamberg. The eruption consisted of annular lesions on the forehead, the chin, and the dorsal surfaces of the hands, in a young married woman. An interesting story of a miscarriage had been elicited. There was an indentation on either side of the tongue, suggesting somewhat syphilitic ulceration, but probably caused by irregular teeth. Since the patient was last presented the eruption had disappeared on the hands following the internal administration of mercury.

DR. HARTZELL said that he still considered the case as a somewhat atypical type of annular lichen planus.

DR. SCHAMBERG thought two diseases were present, an annular syphilis and an annular lichen planus.

Extragenital Syphilis of a Precocious Type. Presented by DR. DAVIS.

The patient, a woman of thirty years, was infected last August; the initial lesion was one-half dollar in size, densely infiltrated, and situated on the central portion of the lower lip. There had been marked enlargement of the submaxillary glands, the sublingual being particularly involved. All of the concomitant signs of syphilis had been present. The appearance of the secondary eruption had been delayed for some weeks because the physician first in attendance had prescribed mercury. The eruption was of the papular type, becoming pustular, and then pustulo-crustaceous and rupial. The disease ran a most malignant course, the patient having chills and sweats. There had been a considerable loss of weight and the patient was very anaemic. A large part of the palate had been destroyed by the disease. At the time of presentation to the Society there were about twenty lesions of the gummatous type, on the arms and the legs, and a few on the trunk.

DR. HARTZELL said the present case came under the heading of syphilis precoox. He brought up the point as to whether extragenitally acquired cases ran a more severe course than those contracted in the usual way, such had been his experience.

DR. SCHAMBERG had found no difference in the severity of those acquired extragenitally than those of genital infection. He referred to several precocious cases that had been treated by him.

DR. STELWAGON had not had the experience of Dr. Hartzell.

DR. WALLIS mentioned an extragenital case that he had recently had, the initial lesion being located one and one-half inches below the umbilicus.

Multiple Abscesses of the Scalp Caused by Pediculosis. Presented by DR. SCHAMBERG.

The patient exhibited was a woman of twenty-seven years, whose general appearance showed a miserable state of neglect. There were numerous nits on the scalp hairs. Fully one-half of the surface of the scalp was involved by three-cent-piece to dime-size abscesses.

DR. WALLIS said the case resembled markedly the one reported by him some years ago, in THE JOURNAL.

Case for Diagnosis. Presented by DR. SCHAMBERG.

The patient, aged forty-eight, had had intermittently for several years, outbreaks of an eruption upon the sides of the face, ears and neck, consisting of dusky-red macules, papules and diffuse patches quite soft to the touch. The lobes of the ears had been, at times, considerably puffed out with this eruption. Recently, scattered maculo-papules, pea-sized and larger, had appeared upon the anterior surfaces of the chest and abdomen. The eruption was accompanied by severe itching. Upon the right shoulder blade was an elevated, large pea-sized, pigmented mole, with a somewhat infiltrated base. This was recently excised and micro-

scopic sections were presented for diagnosis. The speaker expressed the thought that the case might be an early stage of an atypical mycosis fungoïdes.

DR. HARTZELL thought that the microscopic appearances were suggestive of a disease belonging to the sarcoma group, either mycosis fungoïdes or sarcoma, and that the eruption might belong to the type described in leukæmia.

DR. SCHAMBERG said that he thought certain border-line cases, resembling both mycosis fungoïdes and leukæmia cutis were almost impossible to differentiate.

Acne Treated by Bacterial Injections. Presented by DR. SCHAMBERG.

The woman exhibited was twenty-two and had had the present condition for two years. The treatment consisted of injections of a mixture of staphylococci and the microbacilli of Unna and Gilchrist. A stock preparation had been used. Four injections had been given, at weekly intervals, marked improvement following each. Although the original condition had not been seen by those present, the skin on the face showed the remarkable improvement that had been produced by the treatment.

DR. SCHAMBERG said that the injections should be carefully gauged so that the negative phase would not be too marked.

DR. STELWAGON thought the stock preparations were not particularly active, autogenous cultures giving much more satisfactory results.

Lupus Vulgaris. Presented by DR. DAVIS.

A healthy boy of twelve years was exhibited, born in Italy. The family history was negative, no members of the family or the household having had tuberculosis. The patient first came under observation two and one-half years ago. After an absence of two years the case, six months ago, again came for treatment. The condition had spread considerably during the interval, nothing having been done for the eruption. The glands below the submaxillary bones on both sides of the neck had broken down. The greater part of the left cheek, extending down on the left side of the neck, reaching from the ear almost to the mouth, was involved by an irregularly circular patch, with a raised border and slightly depressed centre. The border of this area was dark red in color, with yellowish nodules, typical of lupus. These nodules studded the entire patch. There was a considerable amount of scarring in the central portion, both from the disease and the effect of treatment. The condition originally started five years ago.

DR. HARTZELL said that he believed most of these cases consisted of a local infection, visceral lesions being discovered after the development of the cutaneous lesions.

DR. SCHAMBERG considered that in a considerable number of cases the cutaneous outbreak was secondary to the internal disease.

DR. STELWAGON believed that in quite a number of cases of tuberculosis on the dorsal surface of the hand, the infection occurred from wiping the mouth on the hand in case of lung tuberculosis.

Papulo-Necrotic Tuberculide. Presented by DR. SCHAMBERG.

A boy of five years, apparently in perfect health, was presented by Dr. Schamberg. The eruption started two years ago with the appearance of small papules, on the dorsal surfaces of the hands and fingers. The centres of these lesions became depressed and necrotic, and upon disappearing left a scar. There were several dozen of these lesions, at present, on the hands, fingers, and cheeks. Several scars showed where former necrotic papules had been. The Moro inunction test was positive.

Those present agreed that it was a typical example of the disease.

Lichen Planus and Molluscum Contagiosum. Presented by DR. WALLIS.

A girl of fourteen years was exhibited with two different cutaneous eruptions. There were five, split-pea sized, pearly, umbilicated lesions on the left upper eyelid, or in close proximity to the same, of four months' duration; typical of molluscum contagiosum. The other outbreak consisted of about two dozen, flat, large pinhead-sized, bluish-red lesions, on the dorsal surfaces of the hands and the fingers. Some of these irregularly shaped, somewhat shiny papules had become confluent; others showed a verrucous tendency. This latter eruption had lasted for some months.

Keloid Following the Application of Caustic. Presented by DR. DAVIS.

The patient exhibited by Dr. Davis, was a girl of twenty years. On the inner surface of each little toe there was a pyramidal tumor, extending the entire length of the toe and the thickness of the same. These new growths were pinkish in color with minute blood vessels coursing over them. Two and one-half years ago the patient applied undiluted carbolic acid to the inner surface of each little toe, for the removal of corns; in twelve hours a marked reaction occurred with blanching of the entire surface of the toes. Four or five months after this application the present neoplasms started; growing slowly but progressively.

Case for Diagnosis (Previously Exhibited). Presented by DR. SCHAMBERG.

The patient, a woman of twenty-seven years, was presented by Dr. Schamberg at the November meeting of the Society. At the time the case was originally presented there was a marked swelling of the right side of the face, with an extensive infiltration of the right cheek, the skin being bound down, in a small area, to the bone. There was an indentation of the cheek and ulceration of the gum, and an apparent involvement of the bone. There was a large quantity of saliva in the mouth. The condition followed the ingestion of mercurial pills, given by another physician. The patient had originally been treated by Dr. Schamberg for a varioliform syphilis. At the time the patient was presented, mercury was thought to be the probable cause of the mouth condition. The case

was again exhibited to show the satisfactory result, the patient now being in perfect health, with a good color, cheeks fairly full, and although the right cheek was still somewhat bound down, there was but a slight scar present. The jaws were still partially ankylosed, but the speech was distinct, and mastication could be performed to a certain extent, although there was not an absolute approximation of the teeth. Considering the miserable condition the patient was in at the last presentation the result was markedly satisfactory. Arsenic and the iodides aided the healing.

Case for Diagnosis. Presented by DR. SCHAMBERG.

DR. SCHAMBERG presented the patient to show the difficulty in certain cases in differentiating seborrhœic eczema from a superficial annular syphilis. The patient was a female of thirty-four years. According to the history the condition had lasted intermittently for sixteen years. The eruption consisted of superficial rings and plaques, pinkish in color, some having a slight scale on the surface. The cheeks and the upper lip were the areas attacked by the silver-dollar and smaller sized patches. The largest lesion extended onto the vermillion border of the upper lip. There was one small scar on the left ala of the nose.

DR. HARTZELL considered that the eruption was syphilitic in origin, chiefly from the fact that one of the lesions involved not only the cutaneous surface but also the mucous membrane of the lip.

DR. STELWAGON said that he had seen seborrhœic eczema attack the mucous membrane of the lip, and he considered the present case came under that disease.

DR. DAVIS considered the present case seborrhœic eczema.

FRANK CROZER KNOWLES, M. D.,
Reporter.

BOSTON DERMATOLOGICAL SOCIETY.

January Meeting, 1910.

DR. ABNER Post in the Chair.

Primary Lesion of the Thumb. Presented by DR. BURNS.

The patient was a man, thirty-five years of age, who had had a sore on his left thumb for a month. Beginning as a small, indolent, inflamed area at the border of the matrix of the nail, the lesion had slowly enlarged until it involved about half of the terminal phalanx. The lesion, when exhibited, appeared as an indurated enlargement with a necrotic, granular and irregular surface, bathed in foul smelling pus. The lesion was almost painless, except for a sensation of pressure at the root of the nail. For a week a gradually increasing eruption over the trunk and limbs had been remarked by the patient. This was found to be a profuse maculo-papular syphilide. There was further disclosed, adenitis and pharyngitis. The nature of the thumb lesion was obvious.

Bullous Impetigo Contagiosa. Presented by DR. BURNS.

An infant, thirteen months of age, showed a vesicular and bullous eruption of six days' duration. The first lesions were noticed, by the child's mother, on the chin, and in the intervening time had spread downward over the anterior surface of the neck onto the chest. The vesicular character of some of the earliest lesions was still evident, though most of them had ruptured, dried more or less, and become converted into yellowish, superficial, adherent crusts. The later and more intact lesions were sero-purulent and varied in size from a split pea to a lima bean. There was but slight erythema about the affected regions and the process apparently caused very little discomfort.

Pigmented Syphilide. Presented by DR. SMITH.

A young woman with a fading macular roseola, presented coincidentally a pigmented macular condition of the neck and shoulders, particularly the posterior and lateral surfaces; the roseola of the trunk shading gradually into the pigmented condition on the neck. As the patient had a very dark complexion, the question arose whether the pigmented lesions were of different type or merely the change of color that might follow an outbreak in any dark-skinned person. Dr. Smith said the peculiar blending of the lesions was much more evident by daylight.

The consensus of opinion inclined to the idea that the eruption on the neck and shoulders was the effect of a fading roseola in a dark skin.

Generalized Multiple Pigmented Nævi; Showing the Result of Two Years' Treatment With Liquid Air and Carbon Dioxide Snow.

Presented by DR. BURNS.

This young woman, who was now twenty years of age, was referred to Dr. Burns two years ago for eradication, if possible, of some of the myriads of pigmented nævi by liquid air. Although congenital, her lesions were of very light hue until the age of three. From that age till that of fifteen, all of the lesions had gradually grown darker, while during that period hundreds of new lesions had also come to light. For the past few years, however, the process had been stationary, both as regards increase in number and depth of color. Furthermore, to add to their unsightliness, coarse, dark hair had developed over many of them, and to such a degree on the face that the patient had always felt debarred from social intercourse, and for the past few years from employment, of which she stands in some need. Although she possessed a stenographer's training and was otherwise healthy, her appearance had prohibited employment.

The face and neck were covered by innumerable, pigmented hairy nævi, varying in size from pea-sized, light café au lait maculations with light lanugo hair, to large, thick, chocolate-brown-colored areas, two to three inches in diameter, with long, coarse, black and brown hair. Of

the latter prominent lesions on the face, two were on the right cheek, another continuous with the left brow and a third near the angle of the inferior maxilla on the left side. The appearance of this patient's face was truly pitiable and suggested the appearance of the "dog-face lady" as advertised by museums. The arms and hands showed many lesions in size from a pea to a quarter dollar, but mostly of a light brown color, with little thickening and hair. The trunk and lower limbs were almost universally involved and to an extreme degree. Chocolate colored, thick, rugous, and hairy, characterizes generally the appearance of these regions.

The patient's desire and hope in life was to have enough of the process destroyed on the face, arms, and hands, that she might live openly in the world and gain employment. The treatment, therefore, had been confined to these regions, for to attempt more would be an interminable and probably impossible task.

For the first six months liquid air was used, but subsequently, because of the difficulty of procuring liquid air and also because Dr. Pusey of Chicago had offered in solidified carbon dioxide, an admirable and better substance as a substitute, the latter substance had been employed. Before attacking the coarser lesions on the face the hair was first removed by electrolysis; and it had been the speaker's experience that it was better to remove the hair before attempting the destruction of the nævus, for the resulting thinning and contraction of the epidermis rendered subsequent removal by electrolysis much more difficult and more ineffective. The lighter hued lesions without hair or with only slight growth, were immediately attacked, usually four to six at each sitting, at intervals of ten days. The electrolysis was done leisurely but at best it was many weary hours. For the thinner lesions one freezing of twenty seconds with fairly firm pressure usually sufficed for its destruction; for the thicker ones a varying number of applications, according to the degree of prominence. As was usual after freezing a bulla formed, its covering consisting of more or less of the epidermis, which on drying, desquamated, decorticate the lesion, as it were, from the cutaneous surface.

The success of the treatment Dr. Burns thought spoke for itself. The patient was no longer conspicuously unsightly and she now found regular employment. Although the face and arms were not yet entirely clear, the most important lesions were destroyed and time had proven that only more time and patience would be required to do much more for this unfortunate one.

Syphilide. Presented by DR. BURNS.

A young woman had had a maculo-papular exanthem in October, 1903. Six months ago an annular psoriasisiform eruption began to appear on the cheeks, which, on close examination, seemed to be formed of somewhat dull-red, scaling papules. As the ringed lesion seemed to be a primary configuration the process was thought to be a syphilide rather

than psoriasis. The patient further showed a fusiform enlargement of the left little finger, a radiograph of which revealed no osseous involvement.

Gumma of the Lip. Presented by DR. BURNS.

A man, forty years of age, was seen two years ago with a tuberculo-gummous outbreak of the left leg which was now cicatrized. The lesion on the lower lip was of a month's duration. It appeared as a rounded area of infiltration, an inch and a half in diameter, near the muco-cutaneous junction, with an irregular, ulcerative surface. The lip lesion was quite insensitive and there were no glandular enlargements in connection with it.

Follicular Syphilide. Presented by DR. SMITH.

A male patient was shown with a profuse follicular eruption of two months' duration. The initial infection occurred seven months ago. Over the back where the eruption was especially profuse, many of the papules possessed a central depression, somewhat resembling the umbilication of variola.

Atypical Lichen Planus. Presented by DR. BOWEN.

The patient was a married woman, twenty-six years of age, with no previous history of importance. The affection had first appeared eight weeks previously, starting upon the feet and gradually extending upward. The eruption was very symmetrical, being present in considerable amount all over the body. The head was exempt. The lesions were papules, with more or less scaling, and in many respects resembling the papules of lichen planus, although careful examination in strong daylight failed to show any typical lichen planus papules. There was, however, a marked "lichenification" in many places, showing a decided accentuation of the markings of the skin. In many places the lesions were confluent, forming scaling plaques, with bright shining scales like those of fresh psoriasis. The color of the eruption was bright red, not violaceous. The eruption was more accentuated about the flexures and at the waist line. There were no lesions in the mouth or throat. There was considerable pruritus.

The case was presented as one of probable lichen planus, with a view to raising the question as to when we were justified in separating rather atypical cases from well-recognized dematoses and giving them a different name. It would seem that many cases described under the heading "parapsoriasis" were no more unlike a psoriasis than the present affection was unlike lichen planus.

Persistent Erythema. Presented by DR. BOWEN.

Dr. Bowen reported the case of a man of forty-eight, rather stout, who had been for many years a free liver. The affection was confined to the hands, chiefly upon the dorsal surfaces, where a bright erythema was present, with a slight tumefaction of the skin. At the edge of the

sharply bounded erythema there was, in places, a certain amount of pigmentation. The normal skin at the periphery was very white, perhaps by contrast, for it could not be determined that there was any leucoderma present. The palms were roughened and somewhat scaling, but not affected by the erythema. There was no disturbance in sensation. The affection had begun upon the right hand between two and three years previously, and it was only recently that it had appeared on the left. On the left hand, it was confined to the backs of the fingers, and was not so sharply bounded as on the right side. The affection had thus far proved unresponsive to treatment.

Aenitis, Two Cases, One Associated with Erythema Induratum. Presented by DR. BOWEN.

Dr. Bowen reported a case of adenitis in a young woman of twenty-two. The affection was reported to have begun five months before her first visit. At that time she presented scattered over the cheeks, and especially about the eyes, firm acneiform lesions of medium size, rather harder to the touch than the ordinary acne vulgaris lesions, most of them with a small amount of pus at the apex, and these were said to have persisted from the start without much change. There were several of these lesions upon the upper and lower lids. Besides these hard, persistent, acneiform nodules, there were lesions of a different appearance, much smaller, sharply defined, reddish-brown nodules, which at once suggested a marked similarity to the typical nodules of lupus vulgaris. Several of these nodules were present upon both the upper and lower lids. This case had been under observation at intervals for a period of two years and a half. The lesions all pursued a very chronic course, the individual nodules lasting several months, all of them leaving shallow but distinct pits after disappearing. There was a tendency to spreading of the affection downward over the chin, which was not at first affected, to the neck. The lesions of the upper part of the face, notably those of the eyelids, were the first to disappear.

A little over a year after the beginning of the affection, lesions began to appear on the front and sides of the neck and here the type was somewhat different from that on the face, most of them being deeper seated and much larger, but having a small pustular tip. In this region, also, were present, interspread between and on the larger lesions, the small, reddish-brown, lupus-like lesions already described. At this time almost all the lesions of the upper part of the face had disappeared, leaving pits. There was a slight enlargement of some of the cervical glands. On the posterior surfaces of the knuckles of the right hand there appeared four small papules, almost confluent, firm, slightly scaling, with a depression in the centre. At the end of two and a half years all the lesions had disappeared, but small pits could be seen at their site.

F. S. BURNS, M. D.,

Secretary.

REVIEW
OF
DERMATOLOGY AND SYPHILIS.

Under the charge of GEORGE M. MAC KEE, M. D.

THE MORE RECENT IDEAS ON THE TREATMENT OF
SYPHILIS, WITH PARTICULAR REFERENCE
TO EHRLICH'S "606."

By FAXTON E. GARDNER, M. D., New York.

Because of the great progress made in the knowledge of the ætiology and serology of syphilis, the principles underlying the treatment of the latter have been modified considerably during the past few years. Formerly, it was believed that as soon as the primary sore appeared, generalization was unavoidable and no efforts were attempted to prevent that generalization; some even recommended to wait for that generalization before giving any kind of treatment. The only possible aim of the latter course was to help the leucocytes in their fight against the poison, so as to enable them to throw off little by little, with the assistance of time and of small repeated doses of mercury, as much of the offending element as possible. Such was the principle of the "*extinction*" cure with which an enormous amount of good work has been done; but which, being long and tedious, was not always carefully followed; hence frequent relapses and late manifestations and sequelæ.

The discovery of the spirocheta pallida led to a better understanding of the mode of extension of the disease, and the idea came naturally that if the comparatively few in number spirochætae of the primary sore were checked in their onward march, generalization of the disease would not take place and secondaries would not develop. Hence the "*abortive*" treatment which several syphilographers tried to realize, with sometimes apparent success.

Abortive treatment of syphilis may be carried out successfully, under certain circumstances, with mercury; it is only a matter of *early diagnosis* and of *intensive treatment*. Unfortunately, despite the newer methods of microscopical research and of sero-diagnosis which enable us to make a diagnosis much earlier than was possible a few years ago, the first of the two above mentioned factors does not depend altogether on the physician; it depends as much, and even more, on the patient himself. So that a great number of cases of syphilis will always come to the physician when it is too late for an abortive treatment with mercury to have any chance of being successful; and in those cases, we must either take up the extinction cure or find something else.

If mercury fails here, it is because, in the dose which can be used

without danger in man, it has too little action on the spirochætæ living in the blood. The ideal remedy would be a substance which, when introduced into the circulation, would direct its activity against the parasites living therein, without directing it at the same time against the anatomical elements of the host; a substance, in other words, that would be *parasitotropic* and not *organotropic*. The spirochætæ, even after their entrance into the blood, would be killed and eliminated and a cure would be effected. It would not be necessary, as it is in the abortive treatment with mercury, to begin exactly in the very short period during which the infection is localized to the primary sore. A treatment with such a substance would be abortive even at a much later period; it would really be the "*therapia sterilans magna*," which strikes directly at the cause of the disease, instead of helping the organism to overcome the effects of that cause once they have developed.

That the sterilization with one dose of a powerful drug would be preferable, for practical reasons, to a long treatment with small doses, is obvious; but on theoretical grounds it would also be better, for parasites develop in time a toleration to drugs, so that the latter have no more effect on them.

Such a potent drug seems to have been obtained in Prof. Ehrlich's latest arsenical preparation, now extensively tested in Germany, and, to a lesser extent, in some other countries. This is known under various names: Ehrlich-Hata preparation, No. "606," arsenobenzol, etc. Its discovery is the outcome of years of painstaking research conducted by Ehrlich and his assistants along rigorously defined lines of experimental chemotherapy. The starting point was atoxyl, an organic arsenical compound which presented to a certain extent the qualities required: parasitotropism without organotropism. It is indeed not very toxic, much less toxic than its high percentage of arsenic would seem to indicate; and, on the other hand, it is known to be a powerful destroyer of trypanosomes, particularly of those of sleeping sickness.

Starting from atoxyl, a great number of synthetical substitution products were obtained and tested on animals by Ehrlich and his assistants. More than six hundred have been thus tested to the present time. Of those, only three arsenical compounds have been found to answer the two requisites—arsacetin (acetyl-atoxyl), arsenophenylglycin (No. 418), and arsenobenzol (No. 606). In this quest, it was much harder to find a lack of organotropism than positive parasitotropism. In fact, almost all arsenical compounds are active against trypanosomes or spirochætæ, but nearly all of them must be rejected on account of their high toxic coefficient. Arsenic is the only active part of these compounds: however, the other component chemical groups determine the elective affinity of the whole substance. Thus the amino group has a special affinity for spirochætæ, and the acetyl group for trypanosomes.

"606" is the dihydrochloride of paradioxydiaminoarsenobenzol. Paradioxydiaminoarsenobenzol has weak basic properties on account of its amino groups, and forms salts with acids; on the other hand, it has weak acid properties on account of the phenol groups, and it forms salts with strong alkalies. Paradioxydiaminoarsenobenzol is so unstable that its manipulation is not possible. The drug comes under the form of the dihydrochloride salt, more stable than the base, but not stable enough to keep in solution except for a very short time. It is kept in small, sterile sealed glass vacuum bulbs. The molecular weight is 439 and the percentage of arsenic is 34.

The chemical formula seems to be $\text{NH}_2\text{OH C}_6\text{H}_3 \text{AsAs C}_6\text{H}_3 \text{OH NH}_2$. The arsenic is in the unstable trivalent form instead of in the stable pentavalent form as in atoxyl. The name paradioxydiamino-arsenobenzol is too long for practical purposes; some have abridged it to arsenobenzol; this is incorrect, because the name arsenobenzol belongs rightfully to another compound. The name arsenophenolamin has been recommended as being more representative of the exact constitution of the body. When water is added to the bichloride salt, the latter is decomposed, hydrochloric acid is set free, and the solution is therefore strongly acid: if the free acid be neutralized with an alkali, the base is liberated, which is insoluble in water, but can be made into a fine suspension in water, and thus injected.

Before it was used in man, "606" was thoroughly tested in animals to determine its relative toxic and parasiticidal coëfficients. Michaelis found that the dose of 0.0045 gm. per kilogram of body weight was enough to kill, within twenty-four hours, the spirochætae of experimental testicular lesions, and in monkeys the relatively enormous dose of 0.15 gm. per kilogram was injected without poisoning the animals. In Michaelis' experiments on rabbits, the Wassermann reaction remained negative in the animals injected, while it became positive two weeks later in the controls. The great difference between the efficient dose and the lethal dose (30 times greater than the former) is very remarkable and is what gives "606" its practical value.

In man, the question of dosage is still unsettled. The first dose recommended by Ehrlich was 0.3 gm. Later he raised it to 0.6 to 0.7 gm., and says this ought to be a maximal dose. But considerably more has been injected by several writers; as high as 1 gm. in one injection.

Also, Ehrlich makes it a principle of his *therapia sterilans magna* to inject the whole dose at one time, and not to repeat the injection, for fear the spirochætae would develop a tolerance to the drug; this latter idea, born from experimentation, has not been clinically sustained. Very numerous are the cases in which the injection has been repeated a second time, or even several times more. Fränkel and Grouven have thus given 2.10 gm. in several injections to one patient, and Duhot 1.95 gm. In some cases, particularly in children, the intended total dose has been

administered fractionally; .05 gm. in two or three injections. In nurseries, such ought to be the method.

It is unfortunate that the later reports should not dispel our uncertainty as to dosage, but on the contrary increases it. Instead of creating a general trend of opinion in one direction, they rather exaggerate divergences. Some authors think repeated doses are always necessary; some admit that higher doses are more efficient than smaller ones, while Taege contends that he has seen no difference between the action of the two.

The same unsettled condition exists as to the technique of the preparation, and as to the mode of injection. In none of these respects is the question settled. Ehrlich's cardinal principles of the major sterilizing therapy are already, in many cases, lost sight of. Individual differences are so numerous that it must be given up as a hopeless task to enumerate all of them within the space allotted. Only the more important will be spoken of.

The preparation of the solution to be injected requires much care and attention. First of all, it must be prepared only immediately before the injection, on account of the unstable character of the drug. Second, as the solution cannot be sterilized by heat, it is essential to use only sterilized containers and sterilized solvents, and to avoid carefully all accidental contaminations.

Several techniques have been put forward. The first technique recommended by Ehrlich was as follows: In a glass container holding 50 cc., mix 0.30 to 0.50 gm. of the powder with a few drops of methyl-alcohol, then add 10 cc. of sterile water; then add slowly 2.5 to 10 cc. of a sterile solution of caustic soda until everything, barring a few small lumps at the bottom of the glass, is dissolved. Then add 20 to 30 cc. of distilled water and inject. The solution may contain gelatinous particles that obstruct the needle.

Ehrlich has recently modified this technique and recommends to proceed as follows: Take 0.50 or 0.60 gm. of "606," add 1 cc. of methyl-alcohol, dissolve in distilled water, add 5 to 8 cc. of decinormal solution of caustic soda. Complete with 25 to 30 cc. of distilled water. The solution thus obtained is yellow and easily injected.

Many other modifications have been proposed. Most of them aimed at making the injection less painful. To that effect the addition of an anaesthetic has been recommended by some, but it seems now established that the most important element for painlessness is an exactly neutral reaction of the solution. The acid solution obtained by simple dissolution of the bichloride salt in water is very painful; that is why soda is added to it; but this addition makes the solution alkaline, and this makes it painful, though less than the acid solution. So the aim of the newer techniques is to bring back this alkaline solution to an exactly neutral state. Besides, methylalcohol has been objected to by von

Grosz on account of the very severe lesions it may cause in the optic nerve even in small doses, and it is no longer necessary, because in its actual form the drug is readily soluble in water. The latest technique, that of Wechselmann and Lange, takes these facts into account and seems to be really an improvement. The proper amount of powder is crushed in a mortar; at the same time 2 cc. of commercial caustic soda solution are added. When the powder is dissolved, glacial acetic acid is added drop by drop: a light precipitate is produced, which precipitate is emulsified in 1 or 2 cc. of sterile water. Then, by alternately adding decinormal soda solution and glacial acetic acid, in presence of phenolphthalein, a perfectly neutral solution is obtained. The amount injected is only of from 4 to 8 cc. This technique gives the least painful solution, though Taege avers that he has never been able to give a really painless injection.

Emery and Pépin do not consider the direct addition of a few drops of phenolphthalein for the neutralization a sufficiently delicate index when dealing with such strong substances as caustic soda and acetic acid. They prefer to assay their solution by the drop method on a white porcelain slab. They have evolved a technique which gives an almost mathematical chemical precision. But, unfortunately, such precision cannot be obtained without a perfectly equipped chemical laboratory. The list of necessary instruments they give comprises a dozen different implements.

This emphasizes precisely one of the big drawbacks in the use of "606" which, if not overcome, would restrict its use to very few men, namely, the difficulty of preparation of the injection. Not every practitioner can have the necessary assortment of sterile containers, mortars, graduate glasses, sterilized pipettes, freshly standardized alkaline and acid solutions, litmus paper, color reagents, hot sterilized water, etc., and the preparation itself consumes much time. The workers who have used it most extensively and have acquired a special skill, say that it takes from half an hour to an hour. If it be so with experienced specialists having at their disposal all the help required, how about the unaided general practitioner? Besides, an aseptic injection is rather difficult to obtain on account of the length of manipulation and the impossibility of sterilizing the solution by heat after it is once made. All of which gives considerable interest to Lévy-Bing and Lafay's attempt to devise a simple technique that would give a painless injection. Their *modus operandi* is a radical departure from those employed heretofore. They start from the principle—seemingly substantially correct—that "606" is not absorbed directly, even when in solution, but that it determines, first, the formation of a coagulum which is slowly absorbed. In other words, an injection of "606" behaves exactly, whatever may be the reaction of the injection—acid or alkaline solution of the salt, or neutral suspension of the base—as would an insoluble mercurial injec-

tion. This being so, why reduce the stable hydrochloride salt to the unstable basic form? Why not use simply the hydrochloride salt suspended in an oily menstruum just as we do for calomel, gray oil, or salicylate of mercury emulsions?

The following is Lévy-Bing and Lafay's technique: The powder is placed in a very small sterilized mortar; 2 cc. of the oily menstruum—

Anhydrous sterilized woolfat,	1 part.
Sterilized albolene,	9 parts
(Or better, washed and sterilized poppy oil.),	

are added, and with a small pestle the powder is crushed as finely and divided as evenly as possible in the liquid. When the emulsion is perfect, it is drawn into a sterile syringe. The mortar is washed two or three times with 1 cc. of the menstruum which is also drawn into the syringe. Thus the injection, 4 or 5 cc. at the utmost, is ready in a few minutes, and the drug is injected exactly in the chemical condition it comes from the manufacturer, which is the case with no other technique and we must remember that the experiments of Hata and Ehrlich were carried on with the drug precisely under that form. Lévy-Bing and Lafay say that their results are not yet numerous enough to escape the possible objection of a "lucky series," but as far as painlessness is concerned, they are remarkable. Lafay intends to go a little further, and see whether that emulsion, prepared quickly and aseptically could not be placed in sealed tubes all ready for use. There is no theoretical impossibility, and if it could be realized it would do more than anything else to bring "606" within the reach of the profession at large. Emery and Pépin have adopted now a practically identical technique. Kromayer and Volk had also previously used an oily menstruum, but the idea does not seem to have been followed up in Germany.

The injection may be given in three different ways: In the muscles, under the skin and into the veins. The manipulation described above gives solutions which can be injected in the first two ways. For the intravenous injection, the solution is prepared as follows, according to Schreiber, who has injected more than 325 cases: In a graduated glass cylinder of 250 cc., narrow necked and glass stoppered, 15 to 20 cc. of sterile water are introduced and 0.2 gm. or 0.4 gm. of "606," the smaller dose being for women and the higher dose for men. The container is vigorously shaken till dissolution has been effected. To the solution is now added sterile water or normal salt solution to 100 cc. Now, 0.7 cc. of normal caustic soda solution for each 0.1 gm. of "606" is added and the shaking is kept up till the whole precipitate is dissolved. If the solution, after vigorous shaking, is not absolutely clear, add a few more drops of caustic soda solution. When everything is clear, complete to 150, 200 or 250 cc. with warm water.

The intramuscular injection is given deep into the gluteal muscles. The technique is the same as that of mercurial injections. At first, it was advised to divide the amount to be injected into two parts, and inject one in each buttock. As these intramuscular injections are rather severely painful, it was considered advisable later to inject the whole into one side, so as to leave the patient one side to lie on; the selected side depending on the patient's habits.

The intravenous injection is given according to the usual technique of such injections, in one of the veins at the elbow. Schreiber has had a special appliance made, with which the injection is hardly more complicated than a taking of blood for a Wassermann test. The subcutaneous injection is given according to Wechselmann's and Michaelis' techniques, in the subcutaneous connective tissue of the interscapular region.

What are the respective advantages and disadvantages of each one of these techniques? The intramuscular has been the one most employed till now, and the only one employed at first. It is painful, causes indurations, but has a durable action, as the drug is comparatively slowly absorbed. Lately it has been found to sometimes produce thrombi in the deep veins of the buttocks. This, of course, would be a very dangerous complication. For these reasons, and also for the purpose of having the injected mass more at hand should any untoward symptoms develop, the subcutaneous method is now preferred; in all respects it is comparable to the intramuscular. However, Taege rejects the subcutaneous method as being too slow in its action.

The intravenous injection has the advantage of being absolutely painless; its action is quicker than that of an intramuscular or subcutaneous injection; but the drug being absorbed and eliminated quicker (this point shall be considered later), the action is not as durable. To combine the advantages of the two, one may inject the first half in the veins, to obtain a quick action, and the second in the muscles or under the skin a few days later, so as to have a slower and more durable effect. The intravenous injection offers no special dangers. Ehrlich and Schreiber insist on this point. Schreiber has not seen one single dangerous symptom in 325 injections. Blaschko objected to the earlier technique, because it entailed the use of methylalcohol, but this objection has been done away with. The only argument against the intravenous method is that, on account of its more complicated technique, it cannot become a part of ordinary general practice. However, Bayet believes it to be the only commendable mode of injection.

To be continued.

The Journal of Cutaneous Diseases

INCLUDING SYPHILIS

Under the Editorial Direction of

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